Early

SCOTT

Receivers

A

Vintage

Radio

MONOGRAPH

by

D. H. MOORE

The Editorial Group, Ltd...

P.O. BOX 521 • PALO ALTO, CALIFORNIA

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DEDICATION

...to a way of life -
that should not have
been forgotten.

Autographed Edition

It is my sincerest wish that this latest contribution of my vintage radio writings may afford you as much enjoyment and usefulness as I've had in compiling it.

Over to you, and 73,

Palo Alto

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Preface

These VINTAGE RADIO IDENTIFICATION SKETCH-BOOKS have appeared in three prior editions during the last few years, and have become accepted by university libraries and historical museums, as well as serious vintage radio hobbyists as a significant contribution and ongoing reference of the rise of Radio as a distinct social phenomenon. Through all editions, the purpose of these SKETCH-BOOKS has remained the same - to return a sense of the wonder and the allure of early radio by offering identifying construction instruction of hundreds of early circuits, hardware, accessories, and personally relateable items not to be found in Riders, Sams, Beitmann, et al.

It is important that the reader recognise that these SKETCH-BOOKS and MONOGRAPHS (see back-cover) are not, and were never intended to be, a comprehensive treatise embracing the entire field of early wireless communication, or a course in radio and electrical theory. They have been designed to be utilised by serious hobbyists.

A general knowledge of the vocabulary and the jargon of Radio has been assumed. The use of definitions and mathematical formulae has been deliberately avoided, as such information is readily available from other sources. However, if questions arise from any part of these SKETCH-BOOKS and MONOGRAPHS, the author will be pleased to have a go at answering such questions.

As the "bug" below states, the real fun of Radio has always been in doing it yourself, and not in merely collecting this or that marque and placing it on a shelf to gather dust, mute and motionless, and ambiguous to the non-hobbyist.

D.H.MOORE, A.D.I.

E. H. SCOTT RADIO LABORATORIES, INC.
4450 Ravenswood Ave. Chicago, Ill.

Frontispiece

Ernest Humphrey Scott was a New Zealander, served in the army of the Commonwealth during the Kaiser's War, and when he was demobbed, ended-up in Chicago.

He really had not chosen Chicago to settle down in, as he had spent a couple of years after the War trying to interest the Crown and other Governments in a gadget he had invented during the War and which was extensively used by the Allies. The gadget was a device for trouble-shooting problems in motor-car engines, the sort of diagnostic assessment that we now have done via fancy electronic gadgetry. The foreign governments were not interested, and he decided to visit an American friend in Chicago, whom he had met during the War.

It was during that visit that his friend interested the U.S. Army in Scott's gadget, quite successfully, and Scott sold the rights for $46.000. This decided him to remain in the U.S.

Scott, prematurely bald, was of medium height, neurotic, excessively autocratic where his ideas were concerned, and gifted with that kind of amorphous genius that seems to be inherent in self-made, self-educated men. His first job in Chicago was as a syndicated columnist, writing about motor-car probelms. His syndication eventually reached 112 newspapers, and early on began to reflect interests of his readers in the infant art of Radio.

In 1924 to have a column placed as a weekly feature in 112 newspapers across the country was an impressive feat. Newspapers in those days - that is, the serious papers, as the British would say - unlike the return of yellow journalism in which we daily drown today, and self-styled journalists throw their shallow egos slantwise across the minds of non-thinking readers, featured erudite items reflective of practically every level of contemporary material interest of everyman and his wife. Every serious newspaper had a "Radio Editor", with Hurd of the Christian Science Monitor as probably the best.

It was Scott, in 1922, who invented the scheme for pictorialising the construction details of radios, for people who could not read electrical diagrams or could master the quaint symbols used. The practicality of Scott's invention was immediate and was a dramatic

contribution to arousing the interest of the average man in radio. A year later Apex claimed to have invented the idea, but quickly dropt their claim under challenge. Scott was to challenge the claims of many manufacturers, particularly those of Silver-Marshall as well as Silver, himself, after he set-up under his own name, over the years, right up to the time of his resignation from his own company after he was, in his own words, "stabbed in the back while out of the country".

All media and many manufacturers of kits immediately took up Scott's pictorialisation idea, and they became a standard feature in the better kits - such as Bremer-Tully, who supplied prints in four-colour offset. The reason for such instant popularity could be found in the lack of standardised symbols or even jargon among radio media and manufacturers. It was not until 1929 that the newly formed RME established standardised electrical symbols, which we still use.

In response to the increasing interest in radio by the many readers of his weekly column, Scott, always dedicated to being right, set-up his own testing laboratory, and actually tested every circuit he was asked questions about. His second contribution of significance was to design what we now refer to was the World's Record Eight supe-het. This was the set Scott took to New Zealand in 1925, after making arrangements with WGN and WQJ to broadcast at a given frequency at specified times. After two months in N.Z. he had proved the except-ional qualities of his circuit, had logged every program broadcast, and had his log verified by cablegram from the participating stations.

The DX was 8,000 miles, and needless to say, the experiment was given much publicity in radio and news media of the time. Human nature being what it is, there were those who expressed loud and un-grammatical doubts about his acheivements, even though they had not seen the circuit or were present at any broadcast. Some things may change, but human nature - never.

Scott, being Scott, was annoyed at this doubting segment, and had duplicate parts of the WR 8 shipt to N.Z., where he constructed what was designated the "World's Record Nine". KNX, one of those who were doubtful of Scott's claims, arranged to broadcast a test program. Scott accepted the challenge and while the test was going on, the new radio fraternity was much like the crowds at Epsom Downs awaiting the results of the Kentucky Derby. The WR 9 picked up the test program, Scott transcribed the reception on alumnum discs, and KNX conceded. The news created quite a stir.

So much so that Scott was deluged with requests for copies of the circuit and construction details. Hundreds of the WR 9 were constructed on kitchen-tables across the country, and as few of the home-constuctors had the technical perfectionist complex or the real

knowledge of Scott, problems arose and were presented to him. The main problem was one of alignment. The precision we take for granted today in our electrical and electronic gadgetry was quite unknown in the early days of radio, and ignorance played no small part in creating a myriad of unnecessary construction problems.

Scott, in order to protect and defend his good name, was, as he later phrased it, "literally forced into the radio business". This resulted in his setting-up the Scott Transformer Company - which became Scott Radio Laboratories a few years later. He began manufacturing precisely matched IF coils (transformers), designed for the WR 9, but quite capable of being incorporated into any of the mushrooming super-het circuits beginning to clutter-up the media. The first of hundreds of Scott adverts began to appear and lasted well into the Thirties. Most of them carried a cut of Scott, as shown in the fronispiece of this Monograph, or with him standing by a test-bench in a long white doctor's smock. He was not the retiring type. His operation took up the whole of a 3-storey building, with nearly 100 employees - with Scott in complete control of every aspect of his company.

Other radio circuit designs and receivers followed the success of the WR 9, which will be found detailed in the pages which follow, and the superiority of Scott receivers became the stuff of which myths and legends were made. Nor was Scott bashful about promulgating such legends, himself.

The early Thirties saw the "All-Wave" Scotts dominating the upper levels of radio enthusiasts, with their chrome-plated chassis, chrome-plate power supplies, and silver-deckle finished speakers.The elabourate if not always elegant console cabinets which marked the latter-day "All-Wave" receivers came later. No other manufacturer could compete with Scott's receivers, and while a few claimed equality in this or that aspect, they were immediately challenged by Scott, who often offered money if the manufacturer's set would out-perform any of Scott's receivers. He never lost such challenges. Not even the Octupus (RCA) dared compete with Scott's "All-Wave" receivers.

But the latter-day Scotts, while of more than academic interest, are not the thrust of this Monograph, plus the fact that they are pretty well documented elsewhere. Rather, you will find in the following pages schematics, diagrams, and constuction details of all the early Scott receivers, up to the time of the "All-Wave" receivers. The "World's Record" series of radios are still impressive, not only in their early superiority, but their modern capability. If you have one gathering dust on a shelf, take it down and restore it from the information you will find in this Monograph. If you are a collector of parts and accessories, why not have a go as actually constucting one from scratch? You'll be well rewarded.

Like all precocious men, Scott was usually described as being eccentric, which seems to have been the favourite word of copy-writers of limited vocabularies, a deficiency that is all too obvious among the self-styled journalists of today. However, he was not alone in his pre-occupation with E.H.Scott, as others of the times were equally as pre-occupied with their self-images. McMurdo Silver was probably the most flambouyant, leading eventually to his seeking the dark wisdom of Selinus at his home in Connecticut in 1948; John Rider was probably the most ego-centric; Arthur Lynch would have to be given the prize for petulant in-sistence upon his own magnificence; and David Grimes' physical vanity should be noted - he did have an excellent tailor.

All of these characteristics of the men mentioned, and other early radio pioneers, are tacitly revealed in the thousand of pages of early media, if you take the time to read them, which I have done. But 'eccentric' is as good a word as any, I suppose, to describe Scott's hiding microphones in the sales-room to eavesdrop on his salesmen, and to determine whether they were really dramatising the multiple virtues of

his receivers. His obsession with challenging the pufferism inherent in the claims of other manufacturers was legend. His offers of cash for proof of many claims were never accepted, it should be noted. It was, however, his ongoing feud with McMurdo Silver that gossipers seem to remember most vividly.

When Silver lost Silver-Marshall, he set-up shop under hiw own name and began touting his "Masterpiece" series of radios. Their shiny chrome-plated chassis bore a direct and inevitable comparison with the "All-Wave" receivers then being produced by Scott. Naturally, Scott took a vivid interest in all of Silver's advert claims, and lost no time in challenging practically ever one of them. Silver never accepted any of Scott's challenges, nor did he ever refute Scott's assertions. For those who are unfamiliar with what the historical feud was all about, the following excerpts may give a fair idea:

Silver: *"Masterpiece V - the world's ONLY custom-built radio!"*
Scott: *"You have never sold one single Masterpiece that has actually been built in your own laboratory...As a matter of plain fact, Mr. Silver, you are not even a radio manufacturer but simply a radio jobber, like any of the Mail-Order Radio Jobbers."*

A customer who had purchased a Masterpiece V read Scott's long open letter to Silver, and was moved to write to Silver on that above point. Silver's reply, in part:

"In actual fact, the Masterpiece V receivers are assembled in a special division of the Howard Radio Company a few blocks from here, for license reasons. We are not an RCA licensee...but each receiver is finally tested here."

Silver: *"The Masterpiece V uses a Super-Giant 18" speaker that weighs 70 pounds!"*
Scott: *"Instead of weighing 70 pounds, the total weight of your Super-Giant speaker is only 44 pounds."*
Silver: *"You are correct - the weight specified is weight when packed."*
Scott: *"I believe many who have relied on your misleading statements would like to know how the packing case and excelsior helps to secure higher fidelity or better tone in the speaker."*

Scott: *"During the past three years you have taken a great deal of credit for supplying radios used by the Byrd Expedition...The Masterpiece V was actually rejected after tests. However, in spite of the rejection, you then donated them to the project for general broadcast, which were accepted."*
Silver: *"The five Masterpiece receivers furnished (sic!) the Byrd Expedition were furnished at no cost...for such asvertising benefits as may be derived..."*

(Actually, the receivers used by the Byrd Expedition were designed and built by the Mackay Radio Telegraph Company, the National Company, and certain other manufacturers who specialised in communication equipment not meant for the general public.)

Silver: *"The Masterpiece V is the ONLY All-Wave receiver to use two tuned stages of RF on all bands."*
Scott: *"It does NOT have two stages of tuned RF, and I will donate money to any charity you name if you can prove that it does."*

Silver: *"Lance Dial eliminates the parallax reading error of other dials.....a Beat Oscillator is something new for All-Wave receivers...Something New! - public address and phonograph operation is now possible..."*
Scott: *"The Lance Dial does have parallax...beat oscillators have been in radios for years, as have phonograph and microphone provisions on All-Wave receivers."*

And on and on, far into the night.....

The controversy was never really resolved, of course, as it couldn't be, considering the basis for it in the first place. Scott went on to issue other challenges over the years, but none were ever as "newsworthy" to early radio media managers as the Scott-Silver feud. There is, however, an ironical final note on the feud, in that when Silver filed for bankruptcy in 1938, Scott purchased the company's assets. His comment on the action was:

> *"I did this rather than let the tradition for custom-built radios pass to someone who might tear down the high standards of quality a custom-built product represents."*

However, so that you will not end-up with the impression that Scott was a two-dimensional character, it must also be said that Scott, aside from his love of sleeping, was passionately interested in flying and photography, chiefly cinematography, at which he was quite adept. His penchent for sleeping, incidentally, is peculiar to those who have what the medics call a high rate of metabolic displacement - meaning simply that such people are more mental than physical.

During Hirler's War many Aussies and N.Z. soldiers trained in Canada. Scott financed and operated clubs for these men, taking photographs of each man. If one of them was killed or wounded in the War, he would write a personal letter to the family. Also, he took pride in the fact that he was paying his employees above the minimum wage-scale set by Roosevelt in 1933, long before Roosevelt came into office. This was in itself as remarkable for the times as when Ford, a decade earlier, began paying his workers $5 a day.

Scott's contributions to the U.S.Navy during the War are rather well documented elsewhere, and need not be repeated here. However, he grossed $2.6-million dollars from such contracts in 1943, and was startled to realise that his nett profit was $76,000 dollars. He found this discouraging. At the same time, behind-the-scenes machinations were going on among the other officers of his company which led him to resign in 1945, and take out full-page adverts in the newspapers to disclaim any responsibility for radios sold thereafter under his name. And without the peculiar genius of Scott, the company immediately started to fade, and went out of business completely in 1953.

Meanwhile, Scott and Gladys retired to Saanich, British Columbia, and his home atop a hill-side over-looking the valley, still stands. He died in 1951, from natural causes, aged 64.

The legacy of Ernest Humphrey Scott remains, impressive and enduring. The quality and perfection he brought to Radio has yet to be equalled by the modern radio industry.

* * *
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THE FORGOTTEN SCOTT PORTABLE SUPER-HET, 1925

One rarely, if ever, hears of Scott's name being associated with portables, yet the fame of his "World's Record" series actually began with a portable super-het.

It began in 1925, and the basic portable became the first "World's Record" Eight. With his wife, Gladys, Scott boarded the R.M.S. "Mannganni" in San Francisco and went to New Zealand. The trip was a sort of holiday for Gladys, in that she would be visiting her family and relatives in Tasman — where she was born, and for Scott, a native of Dunedin, a combined business and pleasure junket. The business was to determine, and then prove, that DX-ing was feasible with his newly designed "portable" (it weighed 68 pounds) super-het circuit, and that nothing like it existed in the world. That he was successful is now a matter of history.

They were met at the docks by a correspondent from the N.Z. "Wireless & Broadcast News" periodical. A full-length report of Scott's visit and his triumphs appeared in the 20th May issue,

1925; complete with a very poor cut of Scott and his "portable, as seen below.

The set Scott took to Tasman was - physically, twice the size of the one shown at the beginning of this article. The added dimensions were to enclose the batteries, head-phones, key, etc. The fact that it also sported a carrying handle might suggest that Scott was a very strong man.

Scott had made arrangements with some of the leading U.S. broadcast stations prior to his leaving Chicago, to listen for his signals and to verify them. In just a few weeks he had logged 25 stations from the U.S., the farthest being WCBD in Zion City, Illinois; a distance of 8,375 miles. It should also be mentioned that the set used eight V99's, mounted in shock-absorbing sockets. The notorious fragility of V99's gives the feat added emphasis.

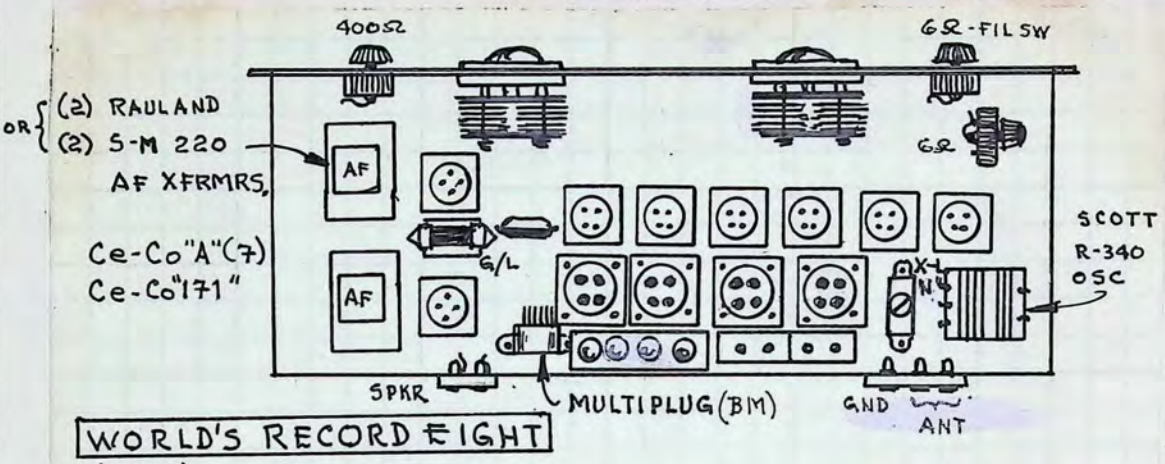
Scott and Gladys returned to the U.S. on the R.M. Motorship "Aorangi", and the growing fraternity of radio enthisuasts in the U.S., and abroad, came to know the name of Scott, and always with great respect, for the next two decades. The gradual decline in the prestige of the Scott name after he left the company was to be expected, as Scott was a unique, if eccentric, radio pioneer.

"Mr. E.H.Scott, of Chicago, Ill., U.S.A. (a native of Dunedin) and his wonderful eight-valve portable super-heterodyne set with which he has established world's records while on a recent visit to Tasman, Nelson District, New Zealand."

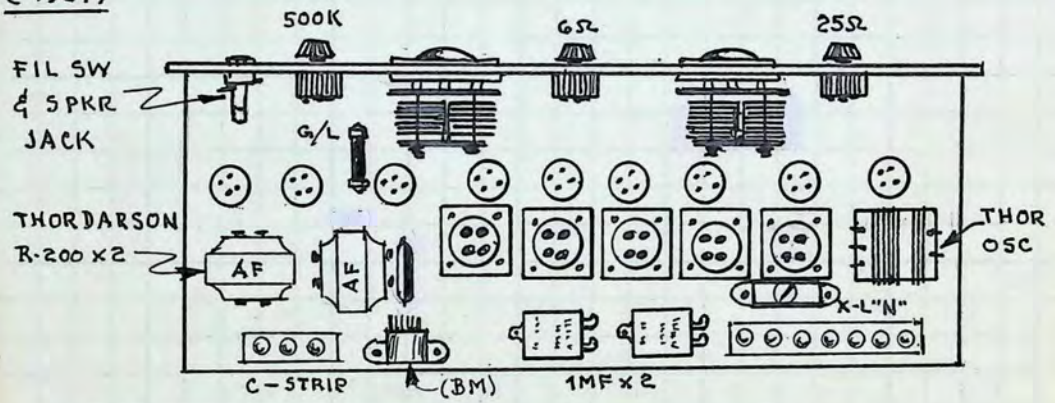
- From the N.Z. "WIRELESS & BROADCAST NEWS" 20th May, 1925

P.S. The circuit for the portable was what became known as the "World's Record" Super 8, detailed herein.

SCOTT WORLD's RECORD SETS EVOLUTION

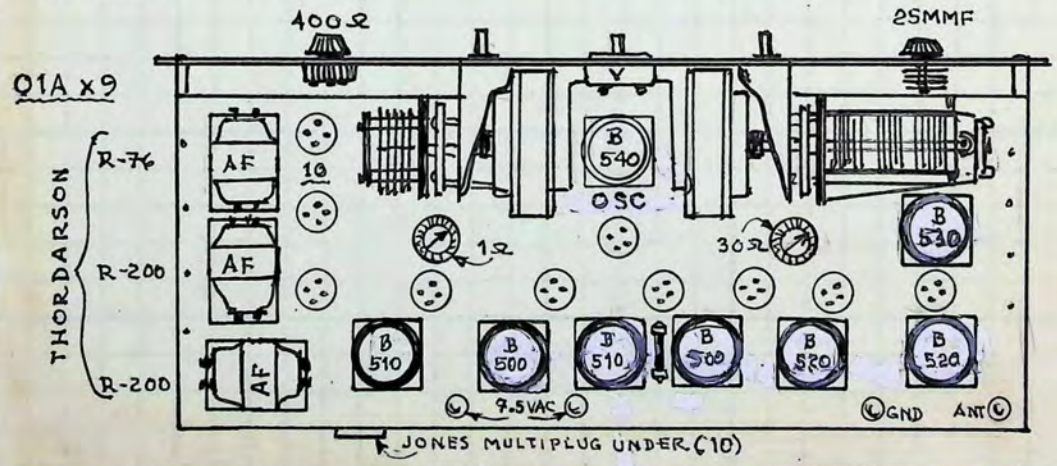


WORLD'S RECORD EIGHT
(1927)



WORLD'S RECORD NINE
(1928)

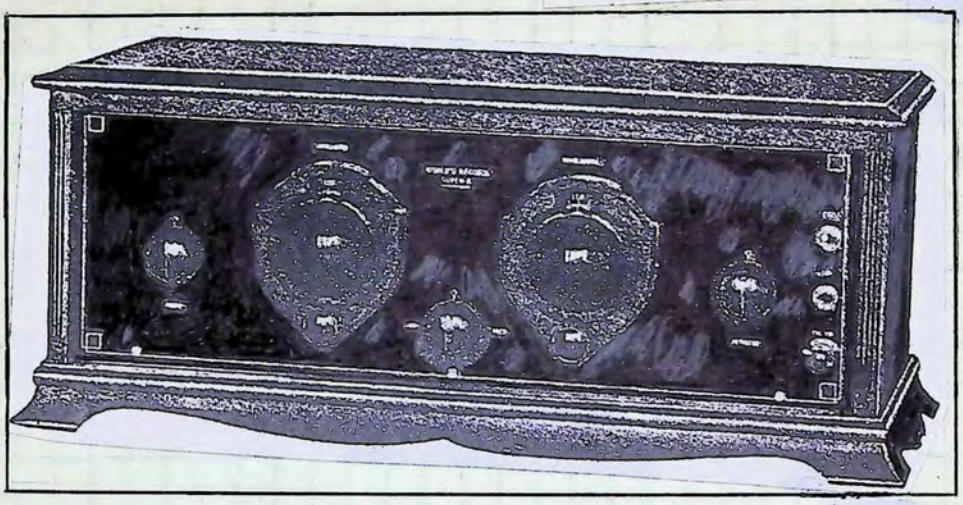
SCOTT "SELECTONE" XFRMS.
USED IN ALL VERSIONS.



WORLD'S RECORD TEN
(1929)

(Sht. 1)

WORLD'S RECORD SUPER



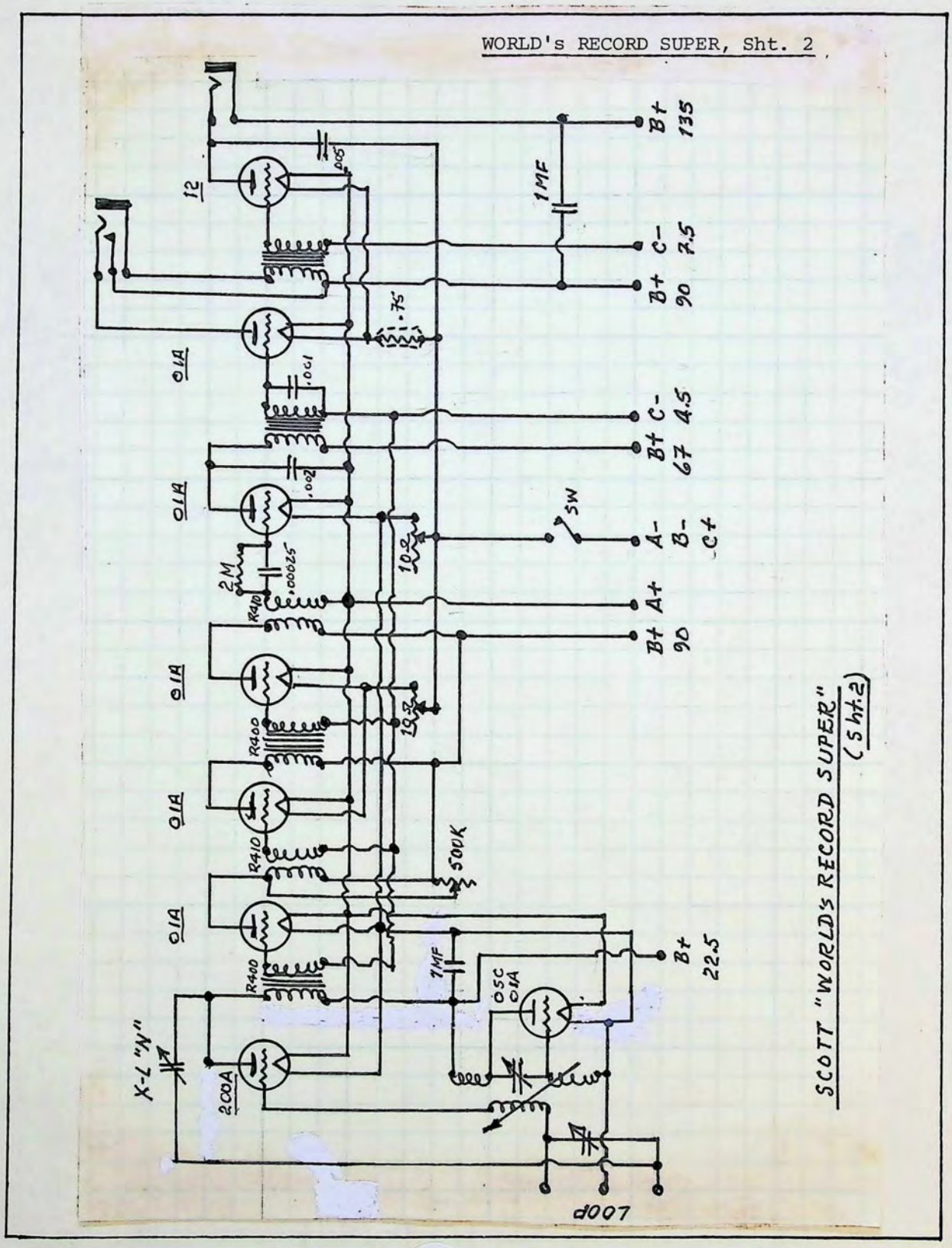
GENERAL PARTS LIST

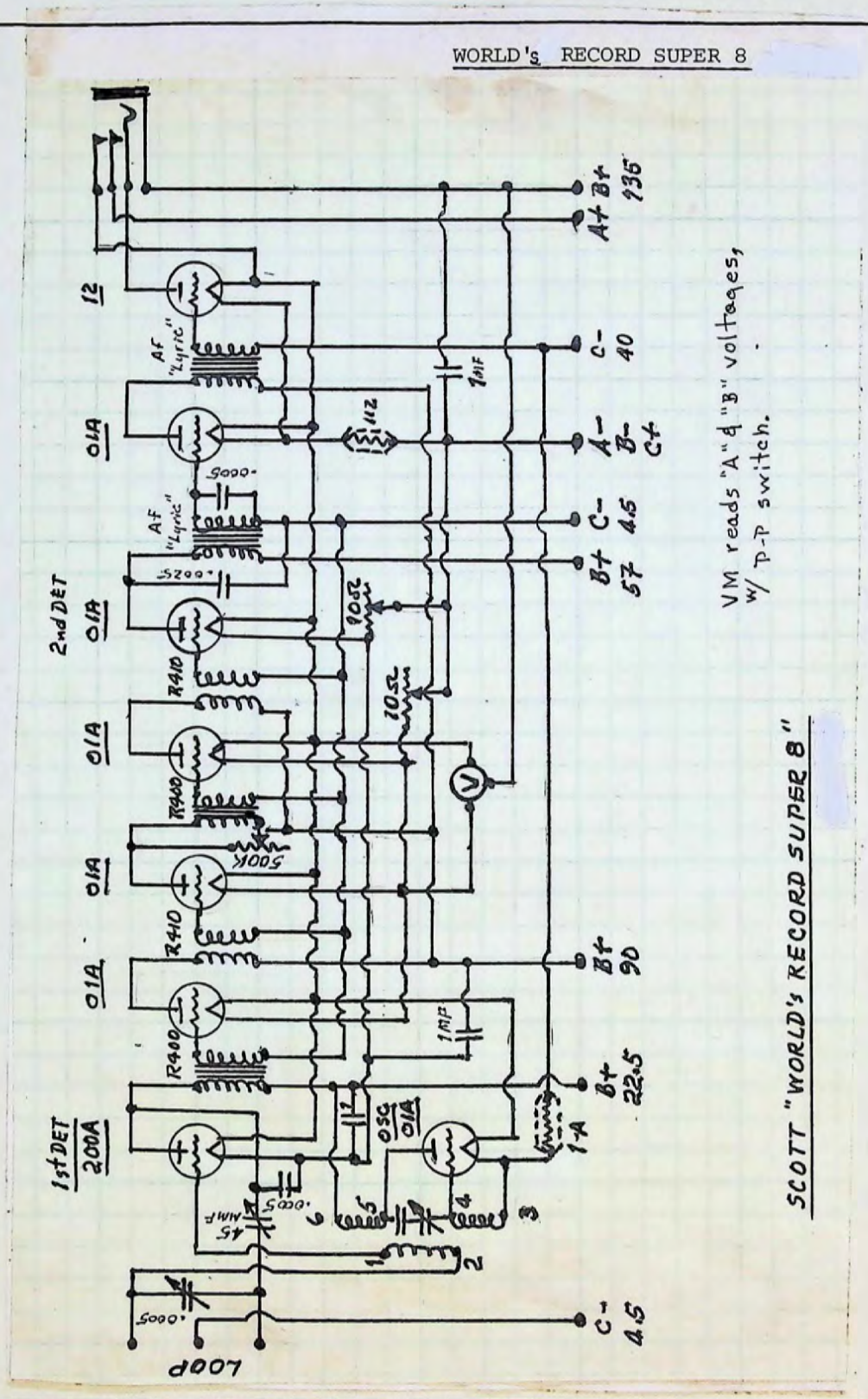
1. Panel = 7"x21" Baseb'd. = 9"x20"x ½"
2. REMLER Variables .0005 (2).
3. FROST #600 Sockets (8).
4. THOR Coupler #460.
5. X-L Variodenser, Type N.
6. SCOTT "Selectone" Xfrmrs. #400 (2)
7. " " " #410 (2)
8. JONES Multiplug.
9. Kurz-Kasch "Aristocrat" Dials (2).
10. .1 MFD Condensers (2).
11. .00025 " (2). 500K Pot.
12. .002 " . (2) RAULAND AF Xfrmrs.
13. .001 " . Single Circuit Jack.
14. .005 " . FIL Switch.
15. 2M Ω Grid-Leak.
16. Binding Posts (6).
17. AMPERITES 1-A & 112.

(Original Kit Cost = $86.60.)

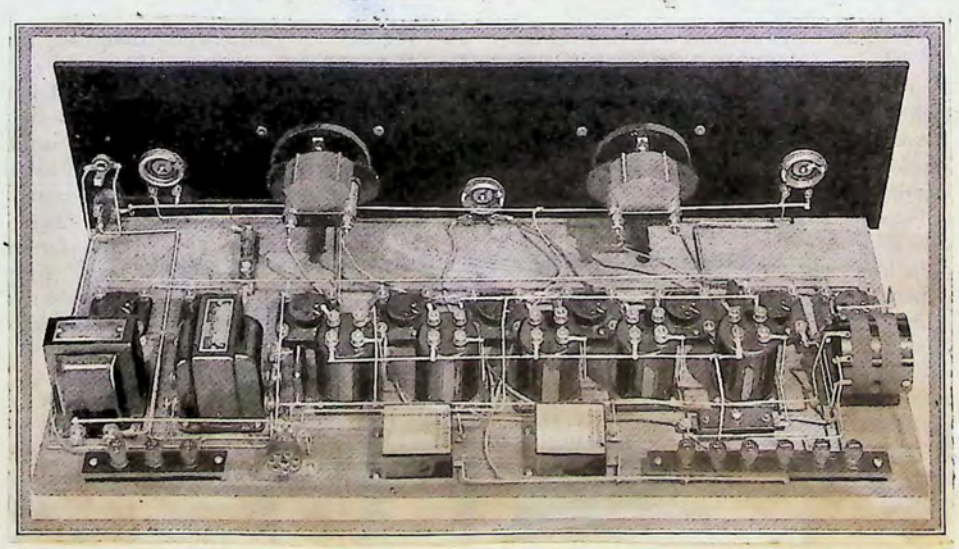
THOR CPLR.
200-500 M
$3.50
(1925)

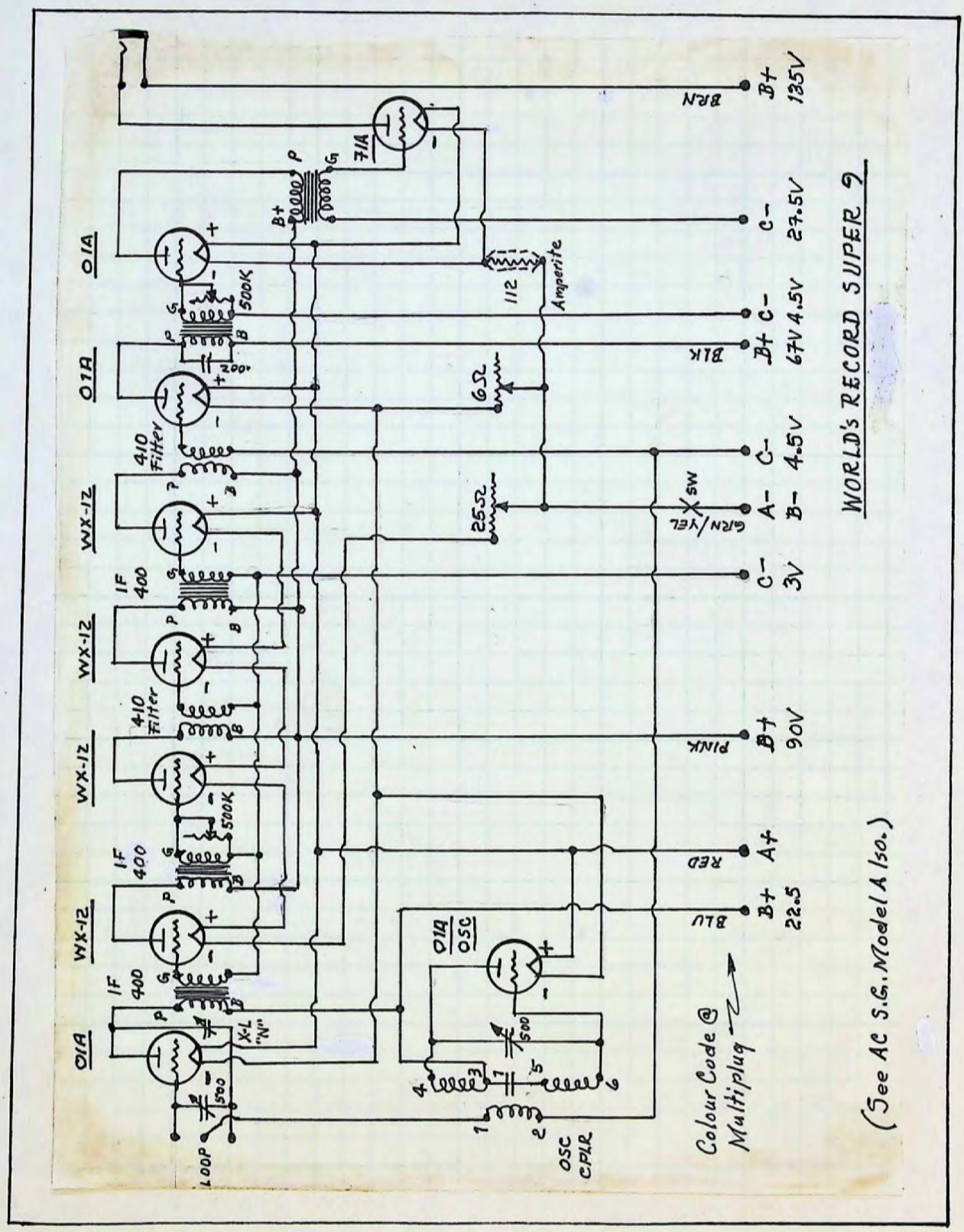
(SCOTT FILE)


WORLD's RECORD SUPER, Sht. 2
12
.005
1MF
B+ 135
B+ C- 90 7.5
131.75
01A
.001
B+ C- 67 4.5
.002
SW
A-
B-
C+
2M
.00025
R410
10Ω
B+ A+ 90
R400
15Ω
R410
500K
1MF
OSC 01A
B+ 22.5
R400
2C0A
X-L "N"
.007
SCOTT "WORLD's RECORD SUPER" (5 ht.2)


WORLD's RECORD SUPER 8
VM reads "A" & "B" voltages, w/ p-p switch.
SCOTT "WORLD's RECORD SUPER 8"
1st DET 200A
2nd DET
01A
AF "Lyric"
R400
R410
500K
105Ω
90Ω
112Ω
1MF
.0005
45 MMF
LOOP
OSC 01A
12
1-A
B+ 135
A+ B+
C- 40
A- B- C+
C- 4.5
B+ 57 45
B+ 90
B+ 225
C- 4.5

SCOTT'S NEW WORLD'S RECORD SUPER 9

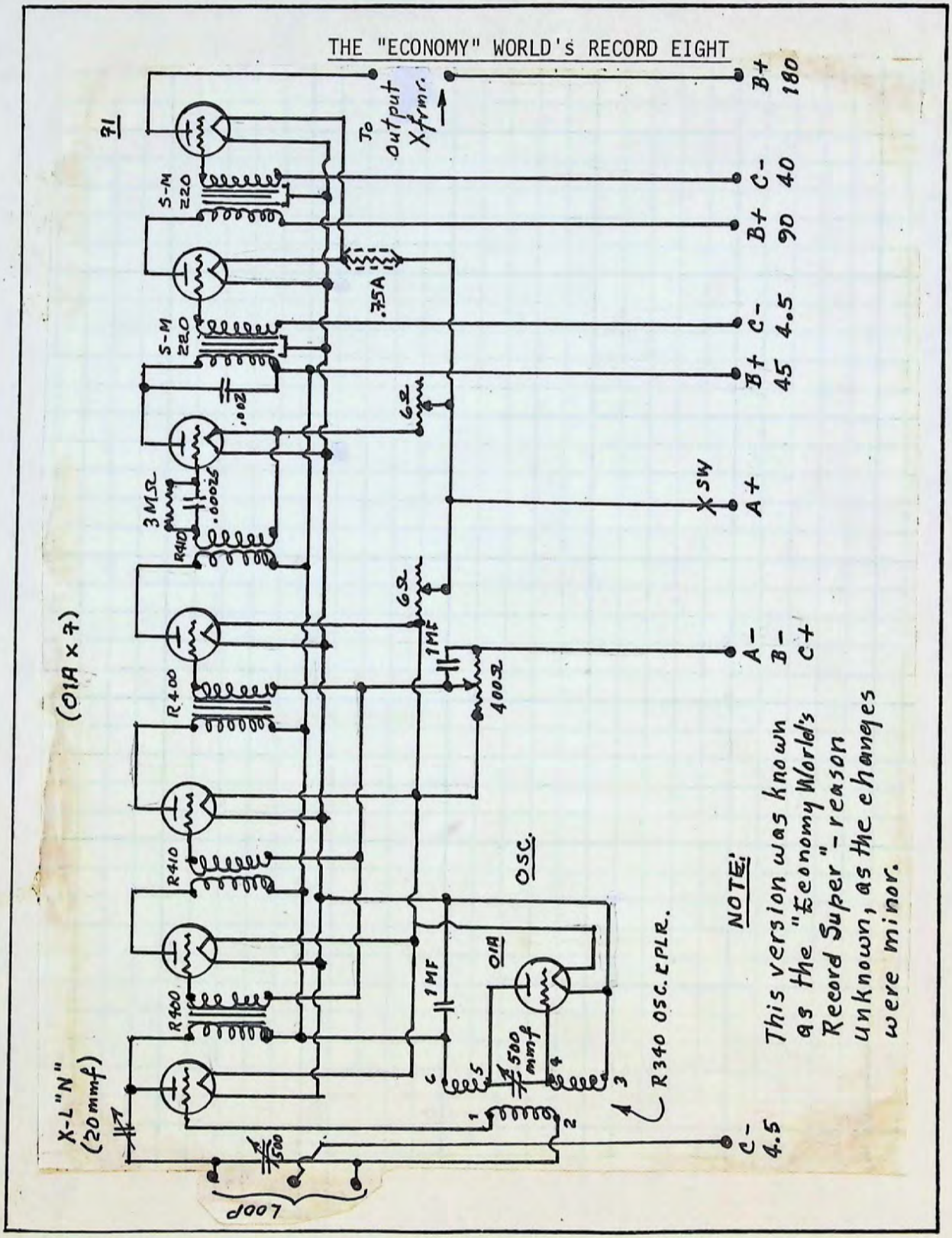


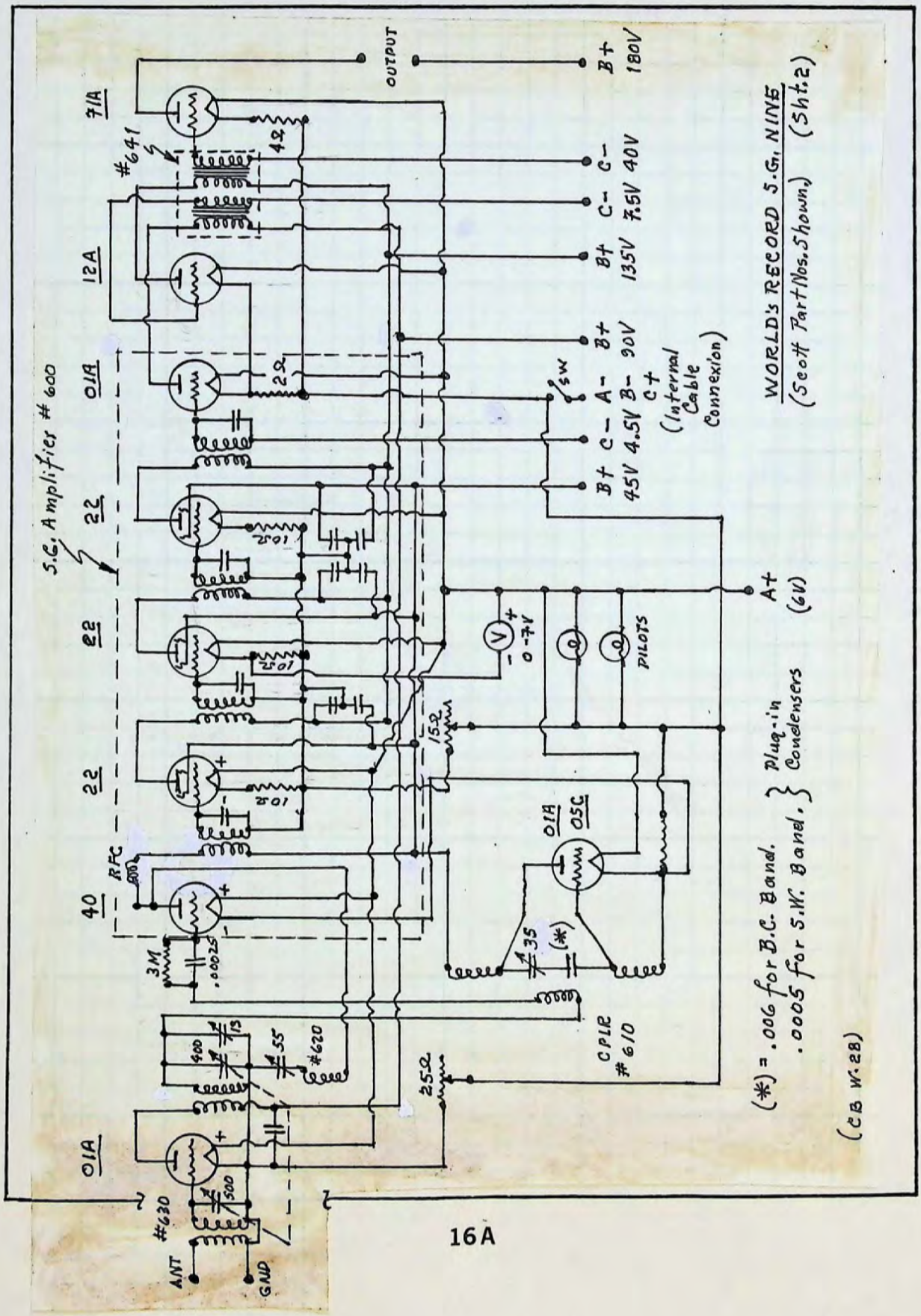

WORLD'S RECORD SUPER 2
(See AC S.G. Model A 150.)
Colour Code @ Multiplug
BRN B+ 135V
BLK B+ C- 67V 4.5V
C- 27.5V
RED A+ B+ 22.5
PINK B+ 90V
A- C- B- 4.5V
C- 3V
GRN/YEL SW
BLU
01A
WX-12
01A
01A
WX-12
WX-12
WX-12
01A
OSC
7I4
410 Filter
IF 400
500K
500
X-L "N"
LOOP
OSC CPLR
112
Amperite
6Ω
25Ω

"WORLD's RECORD" SCREEN-GRID NINE, 1928; Sht. 1

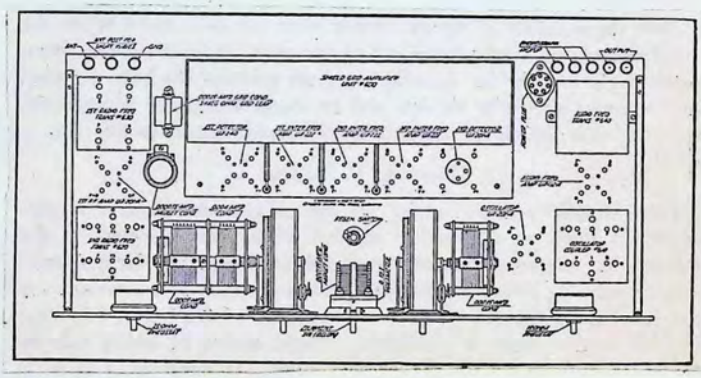
Scott's "World's Record" Screen-Grid Nine was a more or less logical outgrowth of his "World's Record" Nine. Its primary claim to fame was the employment of the new screen-grid tubes for RF amplification, and the then-new 50 power output tube, incorporated into the specially designed power supply.

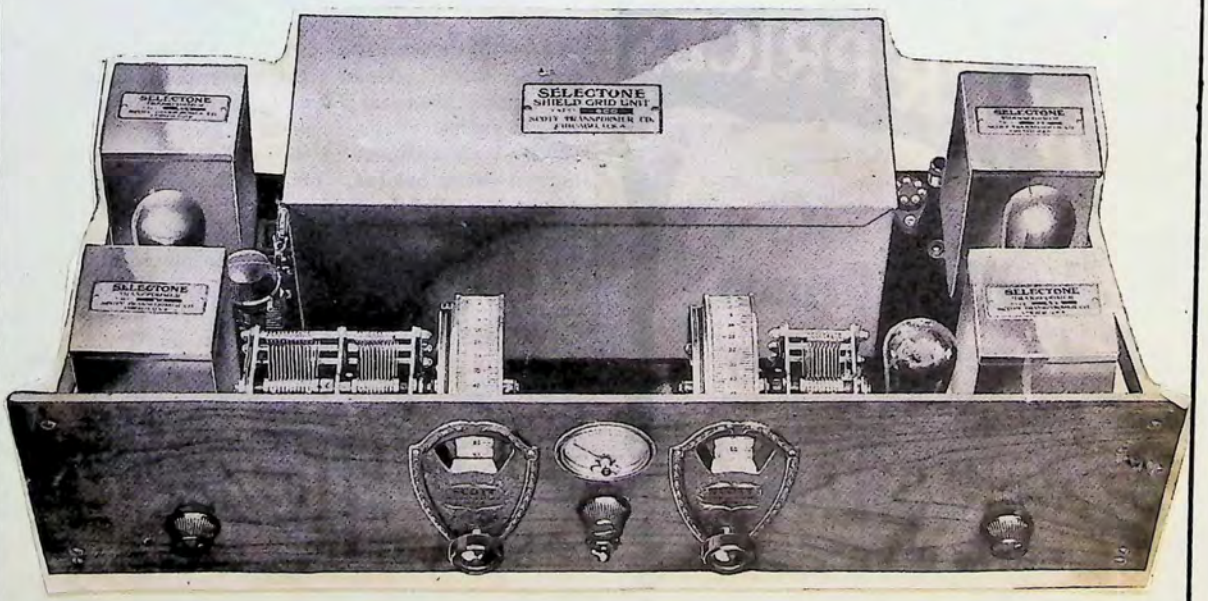
As an exceptional broadcast super-het, it also offered the user short-wave reception via a circuit that by-passed the first RF tube, and by means of plug-in coils. That it also incorporated a photograph attachment feature was in vogue at that time, and like all other such features, utilised the audio sexion of the set only, for record reproduction through the loud-speaker.


THE "ECONOMY" WORLD's RECORD EIGHT
71
To output Xfmr.
B+ 180
C- 40
B+ 90
C- 4.5
B+ 45
A+ SW
A- B- C+
C- 4.5
S-M 220
S-M 220
.002
.35A
3 MSR
R410
.00025
68
68
1MF
400Ω
R400
R410
R400
R340 OSC. COIL
OSC.
01A
1MF
500 mmf
(01A x 7)
X-L "N" (20 mmf)
.0005
LOOP
NOTE:
This version was known as the "Economy World's Record Super" - reason unknown, as the changes were minor.


WORLD'S RECORD S.G. NINE
(Scott Part Nos. Shown) (Sht. 2)
S.G. Amplifier #600
OUTPUT
B+ 180V
C- 7.5V 40V
B+ 135V
B+ 90V
A- 4.5V
C- 45V
SW
(Internal Cable Connexion)
A+ (6V)
PILOTS
0-7V
Plug-in Condensers
(*) = .006 for B.C. Band.
.0005 for S.W. Band.
(CB W. 28)
#641
#620
#610
CP1E
ANT
GND
01A
12A
22
40
RFC
35
55
400
500
250
150
3M
.00025

SCOTT 9
SHIELD-GRID WORLDS RECORD SUPER





WORLD's RECORD SCREEN-GRID 9; Sht. 3

NOTES:

The Scott units shown on the preceding page were for the Broadcast bands only. To pull-in the Short-Wave Bands, the following Scott units were required:

20-50M: Oscillator Transformer #612.

Antenna Coupler #632.

35-90M: Oscillator Coupler #611.

Antenna Coupler #631.

Sangamo .006 Plug-In Condenser.

Sangamo .0008 Plug-In Condenser.

(The Sangamo items are equipt with General Radio plugs.)

A .0005 fixed condenser was specified originally, but was changed to .0008 later. However, either item will reduce the over-all capacity of the 35mmf variable to a value suitable for tuning across the short-wave OSC without this tuning becoming too critical.

If, by mistake, the .0005 ot .0008 capacitor is left plugged-in while tuning the broadcast bands, the OSC variable will not cover the range.

If C.W. only is wanted, the 15-ohm rheostat should be turned up as far as possible. This will throw the IFs into oscillation, making C.W. signals audible.

The schematic shown is for the Scott W.R. S.G.-9-B; the receiver without the "B" after the 9 was the Scott factory job, with all Scott units heavily sealed. Except for the plug-in condensers and combining the two AF transformers into one casing, the two receivers are identical.

* * *
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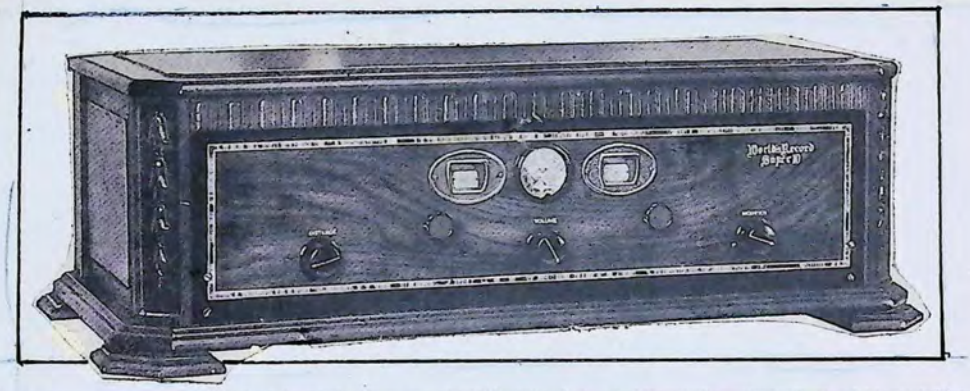
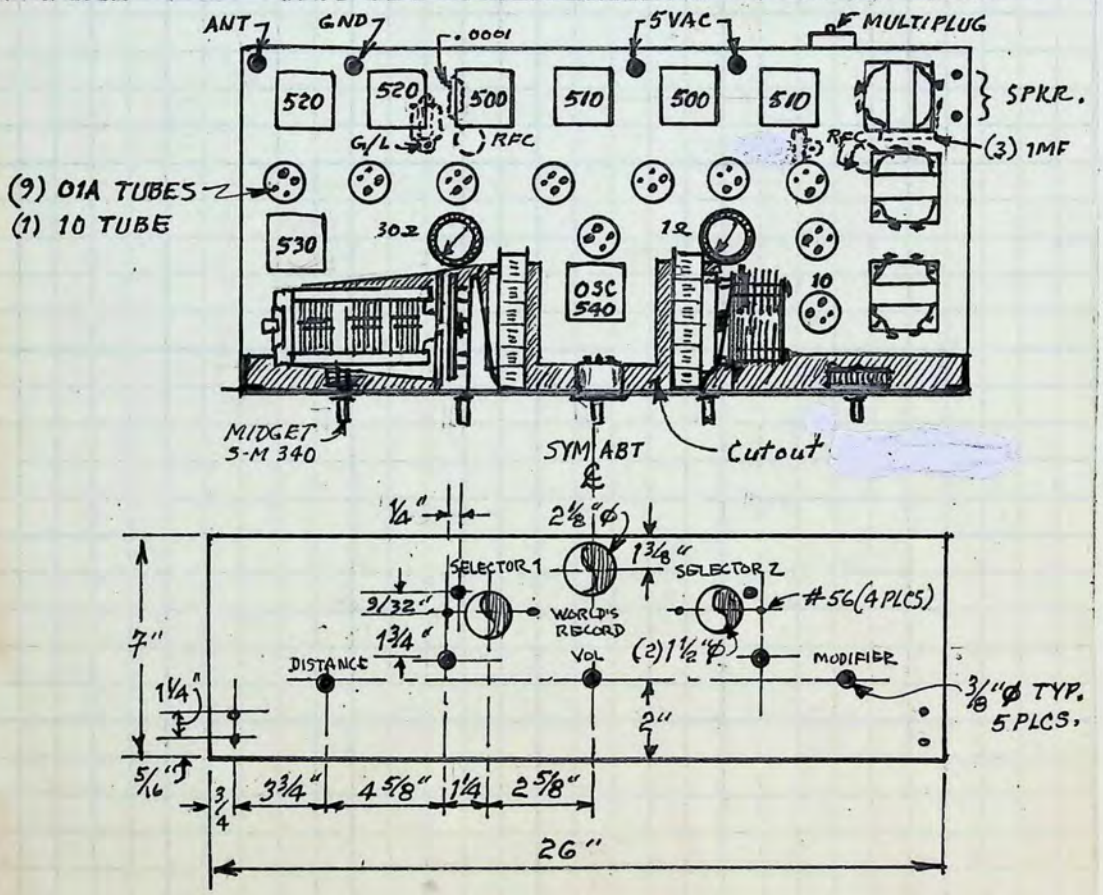
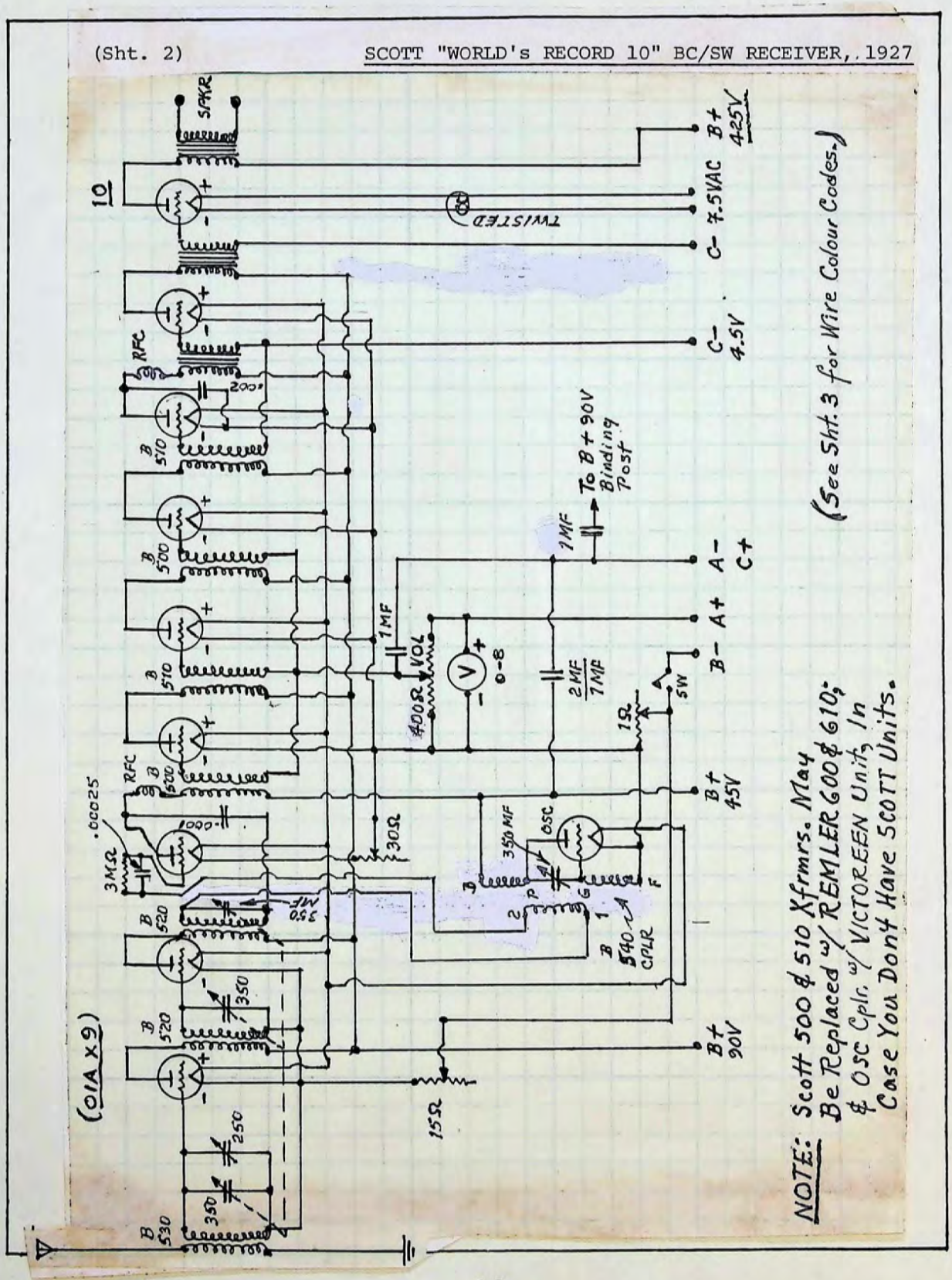
World's Record Super 10





(CB·9·27)

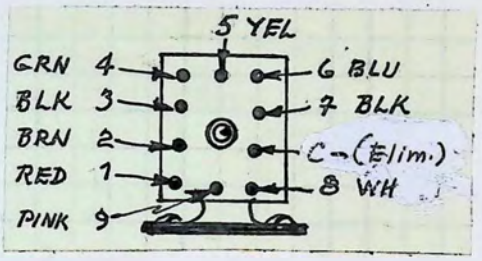
(Sht. 2) SCOTT "WORLD's RECORD 10" BC/SW RECEIVER, 1927



(Sht. 3) SCOTT "WORLD's RECORD 10" BC/SW RECEIVER, 1927

ORIGINAL WIRE COLOUR CODE:

A-	=	Green
A+	=	Red
B-	=	Yellow
B+ 45V	=	Blue
B+ 90V	=	Pink
B+ 425V	=	Brown
C+	=	Black
C- 4.5V	=	Black
C- (Elim.)	=	White



MULTIPLUG COLOUR TERMINALS

PRINCIPLE PARTS LIST

REMLER 3-Gang Variable, 350mfd each sexion.
" 350mfd Variable.
" Universal Drum Dials (2).
" RFC #35 (2).
SCOTT "Selectone" Xfrmrs. B-500 (2)
B-510 (2)
B-520 (2)
B-530
B-540
THORDARSON AF Xfrmr. R-200 (2).
" Output Xfrmr R-76.
S-M #340 Midget Variable.
JONES 10-pt. Multiplug.
JEWELL #135 DC Voltmeter.
X-L Binding Posts (4).
ACME "Celesite" Wire, 40-feet.
BENJAMIN Sub-Panel Brackets #8629.(2).
KELLOGG Soldering Lugs (60).

PANEL = 7" x 26" x 3/16", "Formica".

SUB-PANEL = 10" x 26" x 3/16", "Formica".

NOTES ON THE SCOTT "WORLD's RECORD 10"

The "World's Record Super 10" was the last of the early Scott super-hets. The next phase of development was a brief flirtation with the new screen-grid tubes, and then exploding upon the radio world with his "All-Wave" chromium-plated jobbies. And because the WRS-10 was the last of a breed, its technical specs are of passing interest, in that they also reflect the changes in Scott's thinking from the WRS-8.

The design called for two stages of straight tuned RF amplification which were combined with a super-het circuit, feeding into the 1st DET, and tuned by a 3-gang variable. The variable was controlled by an illuminated drum-dial.

Following the 1st DET and its associated OSC, was the 3-stage IF amplifier, working into a non-regenerative 2nd DET and a 2-stage transformer-coupled AF amplifier. A loud speaker was coupled to the last AF tube through an output transformer. A second illuminated dial controlled the single variable, which controlled the OSC.

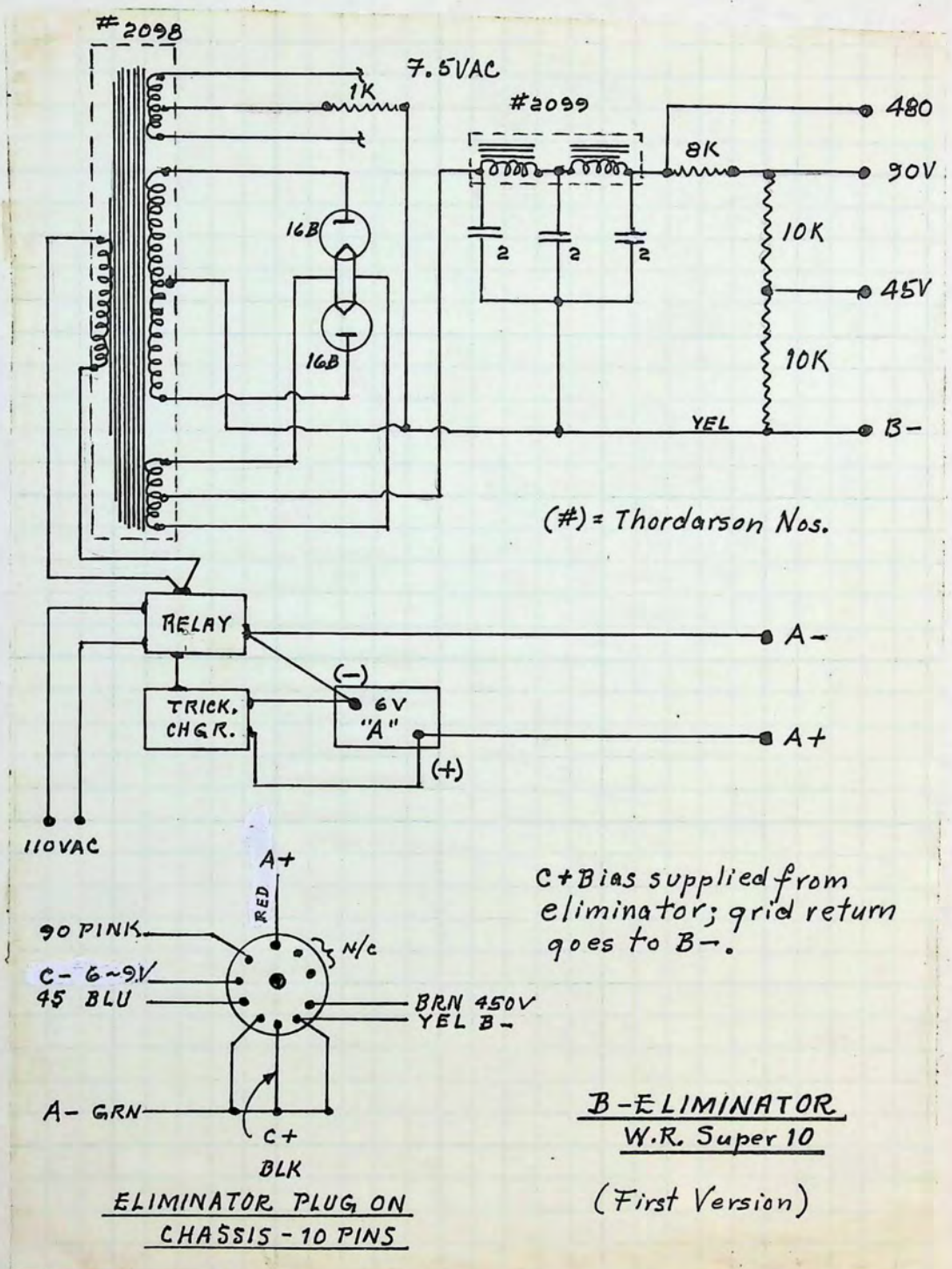
Excluding the power supply, the WRS-10 parts were:

"Selectone" ANT Coupler, B-530.
" RF Xfrmrs., B-520 (2)
" OSC Coupler, B-540.
" IF Xfrmrs., B-500(2); B0510(2).
Thordarson R-200 AF Xfrmrs. (2).
" Output Xfrmr., R-76.
Remler 3-in-Line Variables, 350 mmf each sexion.
" Single gang variable, 350 mmf.
" RFCs (2).
Carter 15-ohm Rheostat with FIL switch.
" 1-ohm Rheostat; 30-ohm rheostat.
" 400-ohm pot.
Benjamin Tube Sockets (10).
" Sub-Panel Brackets (2).
Jewell 0-8VDC Voltmeter.
S-M Midget Variable, #340.
2M-ohm Grid-Leak.
Panel, Formica = 12" x 26" x 3/16".
Sub-Panel, Formica = 10" x 24".
"X-L" Push-type Binding Posts (4).
10-Wire Battery Cable.
Phone-Tip Jacks (2).
Fixed Condensers: .002; .0001; .00025.
By-pass 1MFD Condenser.
01A Tubes (9); 10 Tube.
Remler Drum-Dials with Pilot Lamps (2).

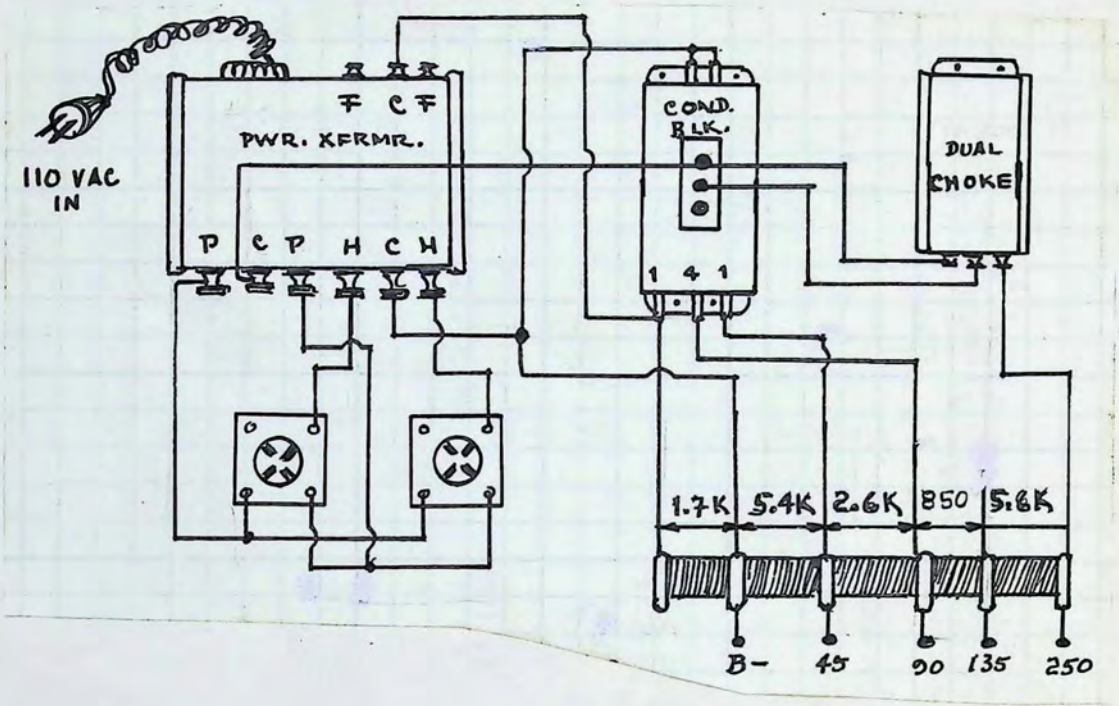
Contrary to the practice of the times, the 2nd DET grid-leak had a negative bias.

The 400-ohm pot. was the "Sensitivity" control of the IF stages, and should be set at that point where tubes are just below the usual point of oscillation - a common instruction in those days.

The midget variable at the left on the panel was used for refining a signal from an sxtremely distant point. Any inequalities remaining in the circuit, caused by differences in wiring or use of parts other than those specified, were compensated for by the small trimmers on the frame of the 3-gang variable. Adjustment of these trimmers was accomplished by pulling in a weak signal, with the plates of the midget variable at half-mesh. The trimmers were then adjusted for maximum volume.


#2098
7.5VAC
1K
#2099
480
8K
90V
16B
16B
2
2
2
10K
45V
10K
YEL
B-
(#) = Thordarson Nos.
RELAY
A-
TRICK. CHGR.
6V "A"
A+
(-)
(+)
110VAC
A+
RED
90 PINK
N/c
C- 6~9V
45 BLU
BRN 450V
YEL B-
A- GRN
C+
BLK
C+ Bias supplied from eliminator; grid return goes to B-.
B-ELIMINATOR
W.R. Super 10
(First Version)
ELIMINATOR PLUG ON CHASSIS - 10 PINS

WORLD's RECORD SUPER 10" B-ELIMINATOR; 2nd Version

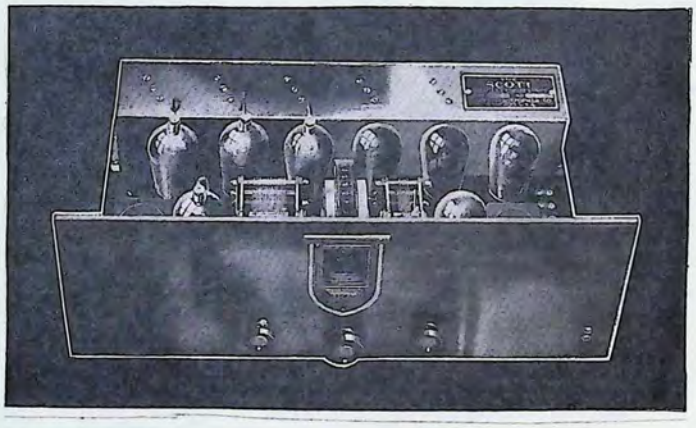


NOTE: If you happen to have the THORDARSON POWER COMPACT 210, you will find that it interchanges with this eliminator with no changes.

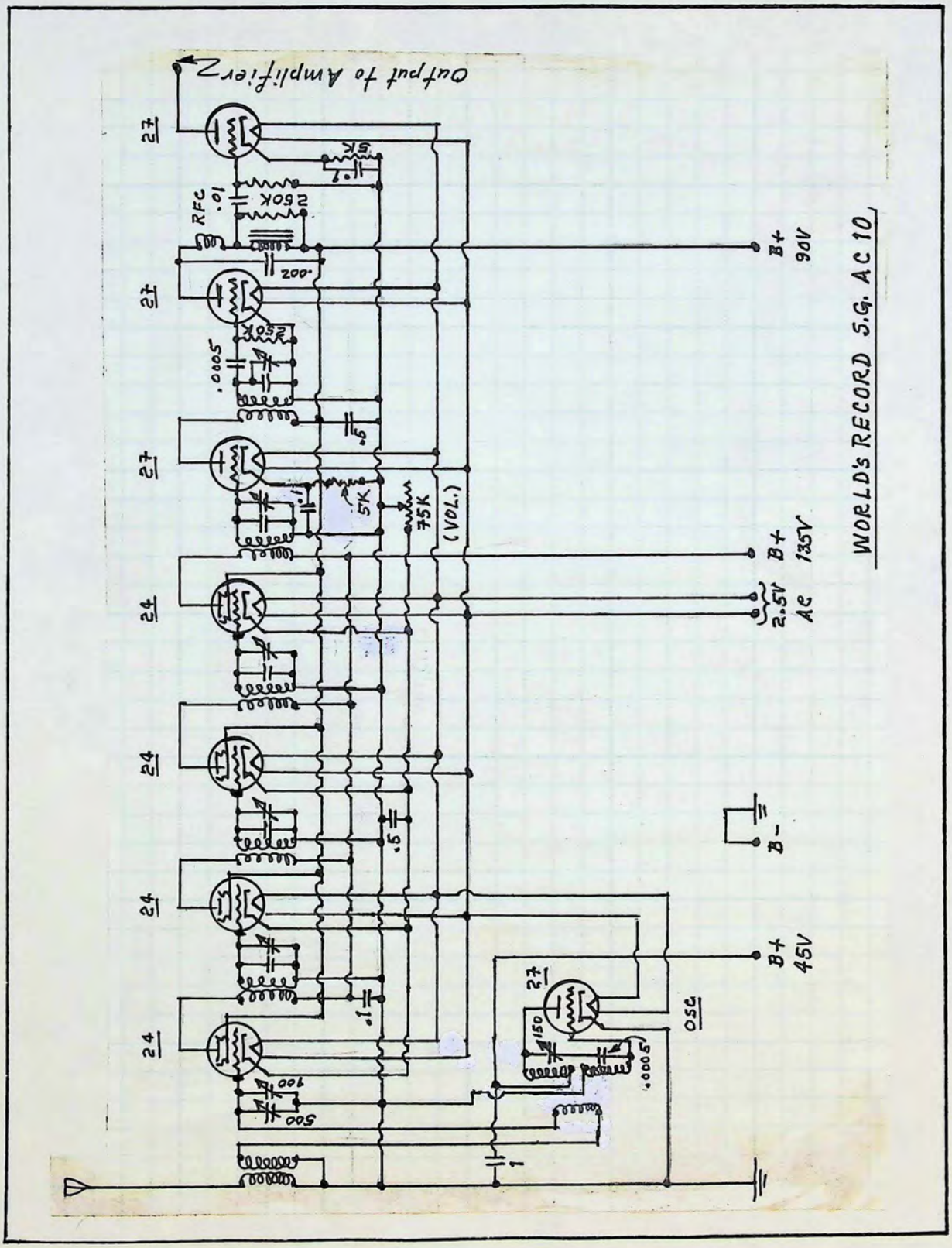
PARTS LIST:

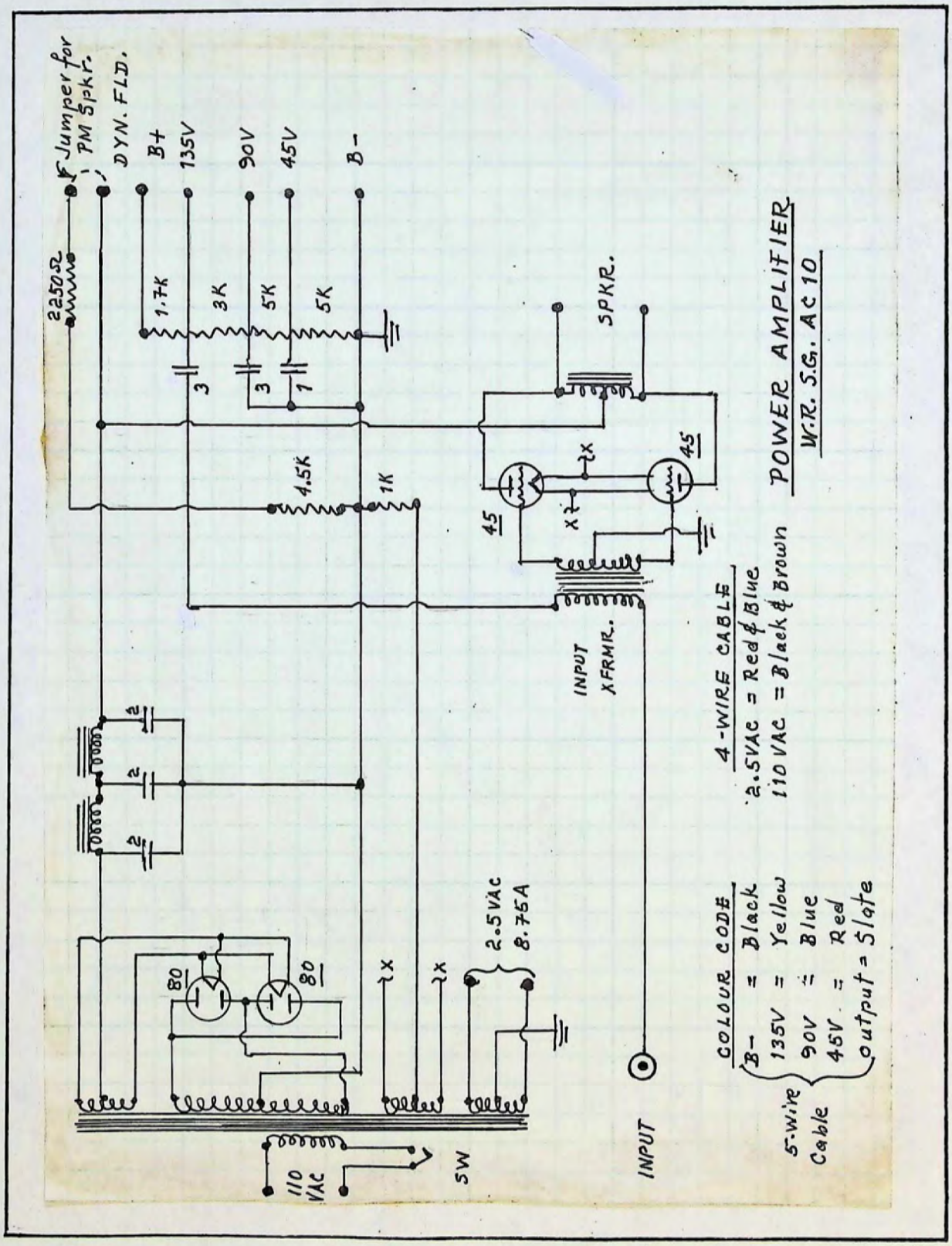
Wood Base = 9" x 12" x .5".
Binding Post Strip = 8" x .75" x .250".
"X-L" Push posts (7).
Carter S-20M Resistor (Voltage Divider).
Tobe R-210 Condenser Block.
Frost Sockets (2).
81 Rectifiers (2).
Thordarson 2098 Power Transformer.
Thordarson 2099 Dual Chokes.

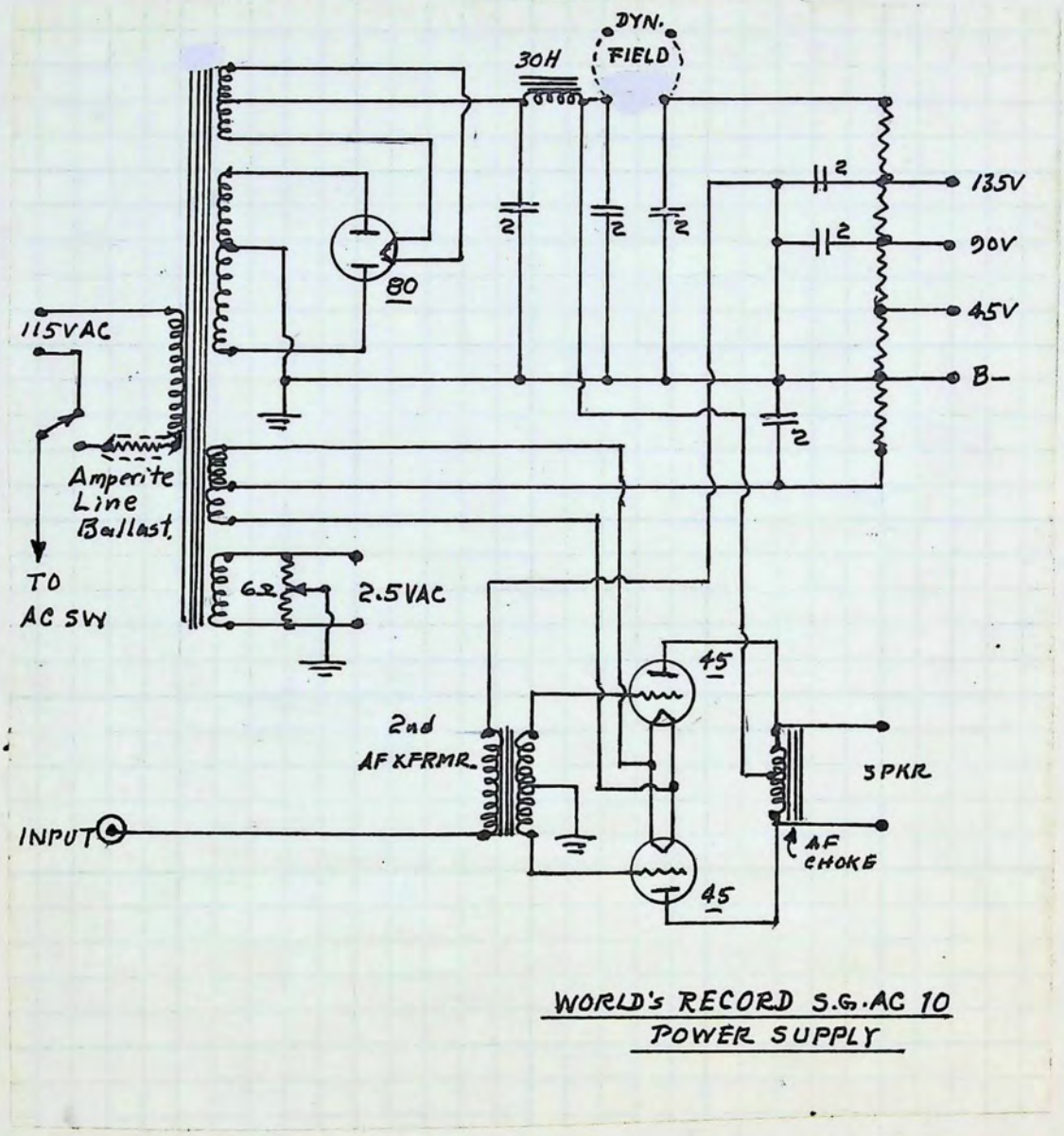
The Scott World's Record Shield Grid A-C 10



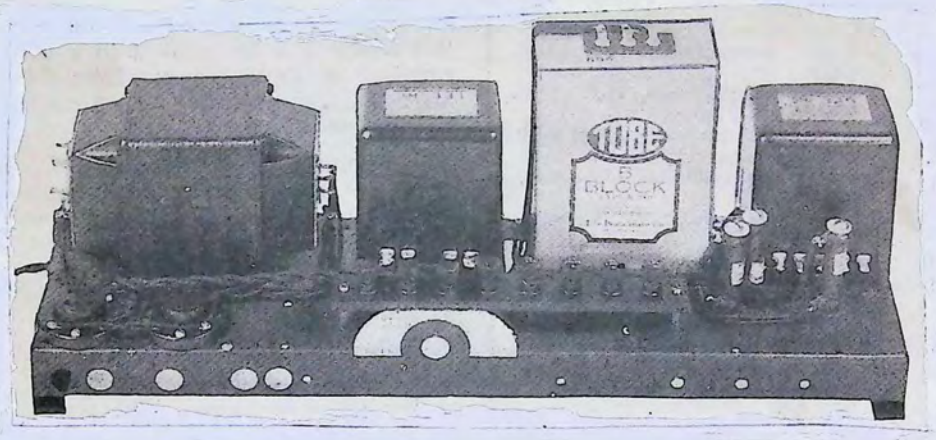
The Scott S.G. AC 10 was a logical outgrowth of the World's Record 9, but it was quickly followed by the S.G. AC "Symphony", as the Great Depression was beginning to set in, and the "Symphony" was frankly cheaper. The S.G. AC 10, however, did allow Scott to come up with yet another advance - a remote control for the S.G. AC 10 - the first remote control for a super-het, and operated like a remotely controlled oscillator. There were no moving parts, the variable in the receiver did not move, and it did not interfere with regular tuning of the receiver. A cut of the device is shown below, and the schematic for the World's Record S.G. AC 10 will be found over-leaf. The last of the World's Record series.....

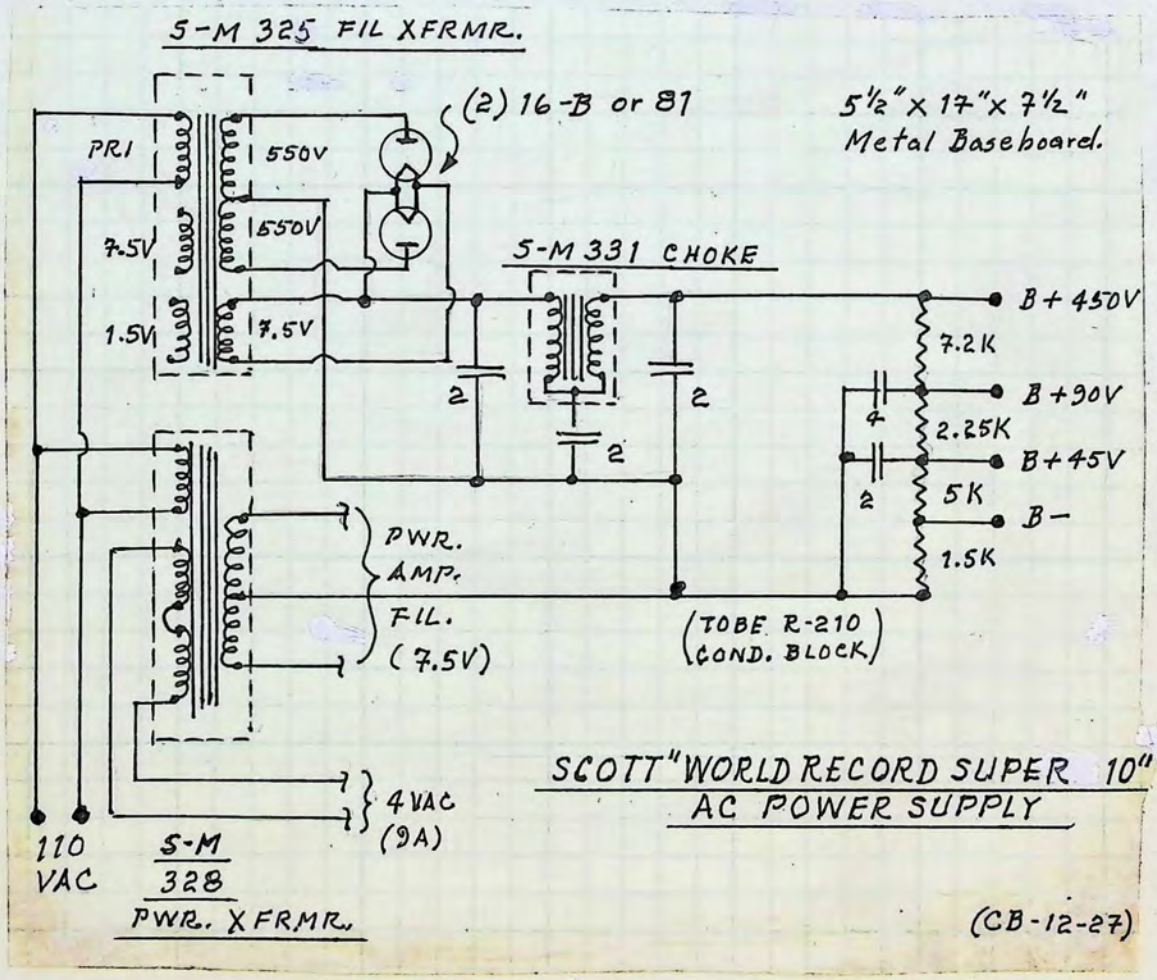

Output to Amplifier
27
27
27
24
24
24
24
RFC
.01
250K
.002
.0005
250K
.1
5K
.5
75K
(VOL.)
B+
90V
B+
135V
2.5V
AC
WORLD'S RECORD S.G. AC 10
B-
B+
45V
27
OSC
150
.0005
500
100
.1
1

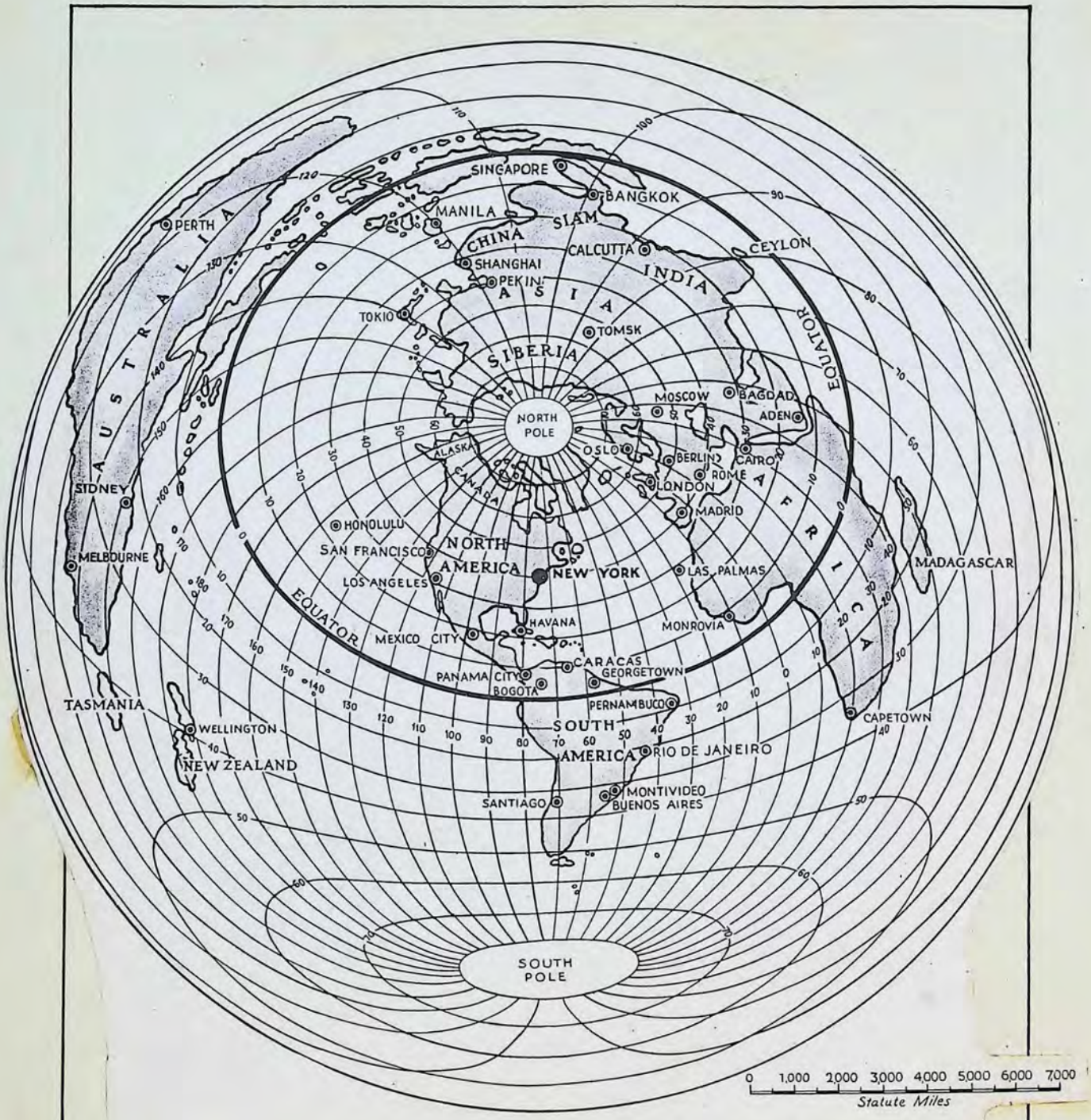

POWER AMPLIFIER
W.R. S.G. AC 10
4-WIRE CABLE
2.5VAC = Red & Blue
110 VAC = Black & Brown
COLOUR CODE
B- = Black
135V = Yellow
90V = Blue
45V = Red
output = Slate
5-wire Cable
INPUT
INPUT XFRMR.
SPKR.
Jumper for PM Spkr.
DYN. FLD.
B+
135V
90V
45V
B-
225Ω
1.7K
3K
5K
5K
4.5K
1K
45
45
80
80
2.5VAC 8.75A
110 VAC
SW



WORLD's RECORD S.G. AC 10
POWER SUPPLY

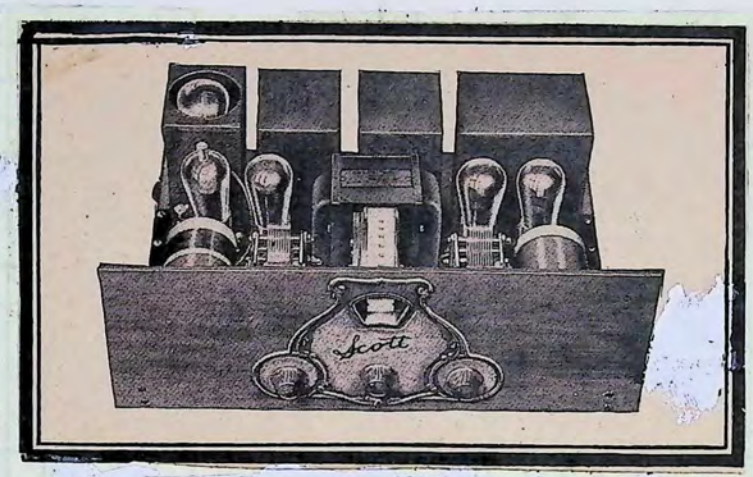

TUBE
BLOCK

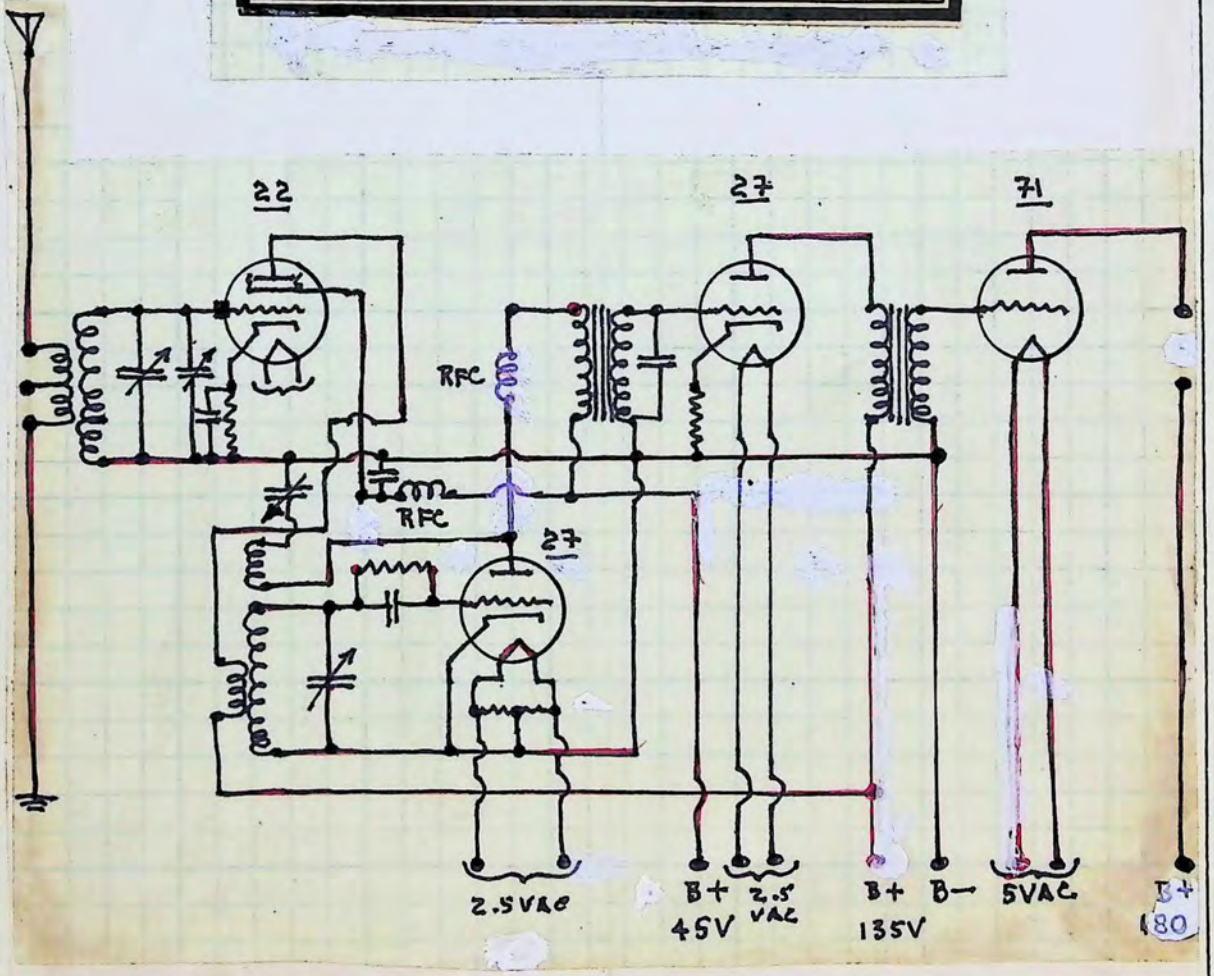

5-M 325 FIL XFRMR.
(2) 16-B or 81
5½" x 17" x 7½"
Metal Baseboard.
PRI
550V
550V
7.5V
1.5V
7.5V
5-M 331 CHOKE
B+450V
7.2K
B+90V
2.25K
B+45V
5K
B-
1.5K
2
2
2
4
2
PWR.
AMP.
FIL.
(7.5V)
(TOBE R-210
COND. BLOCK)
4VAC
(9A)
110
VAC
5-M
328
PWR. XFRMR.
SCOTT "WORLD RECORD SUPER 10"
AC POWER SUPPLY
(CB-12-27)



SCOTT DX MAP OF THE WORLD

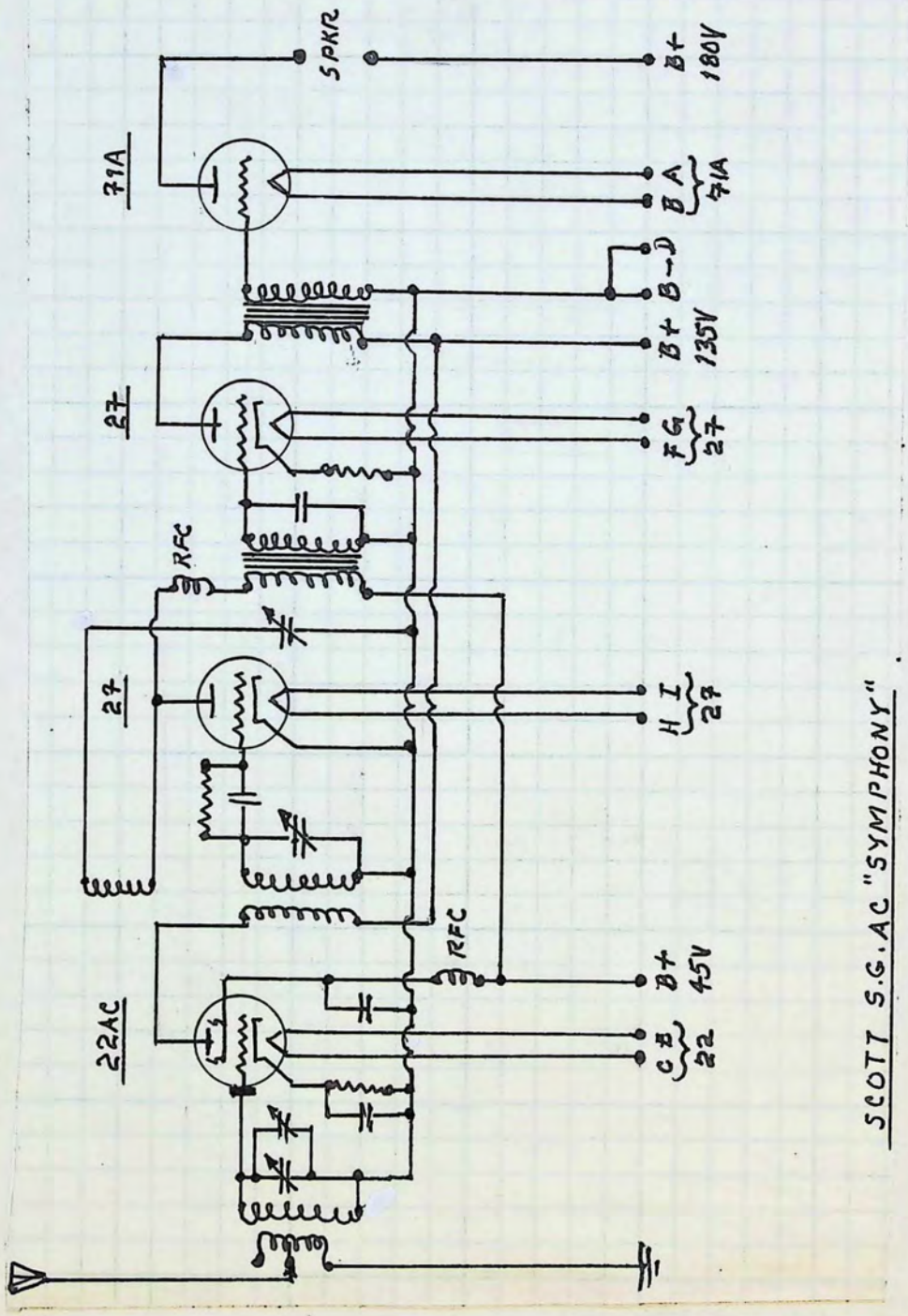
SCOTT SHIELD-GRID AC "SYMPHONY", 1927

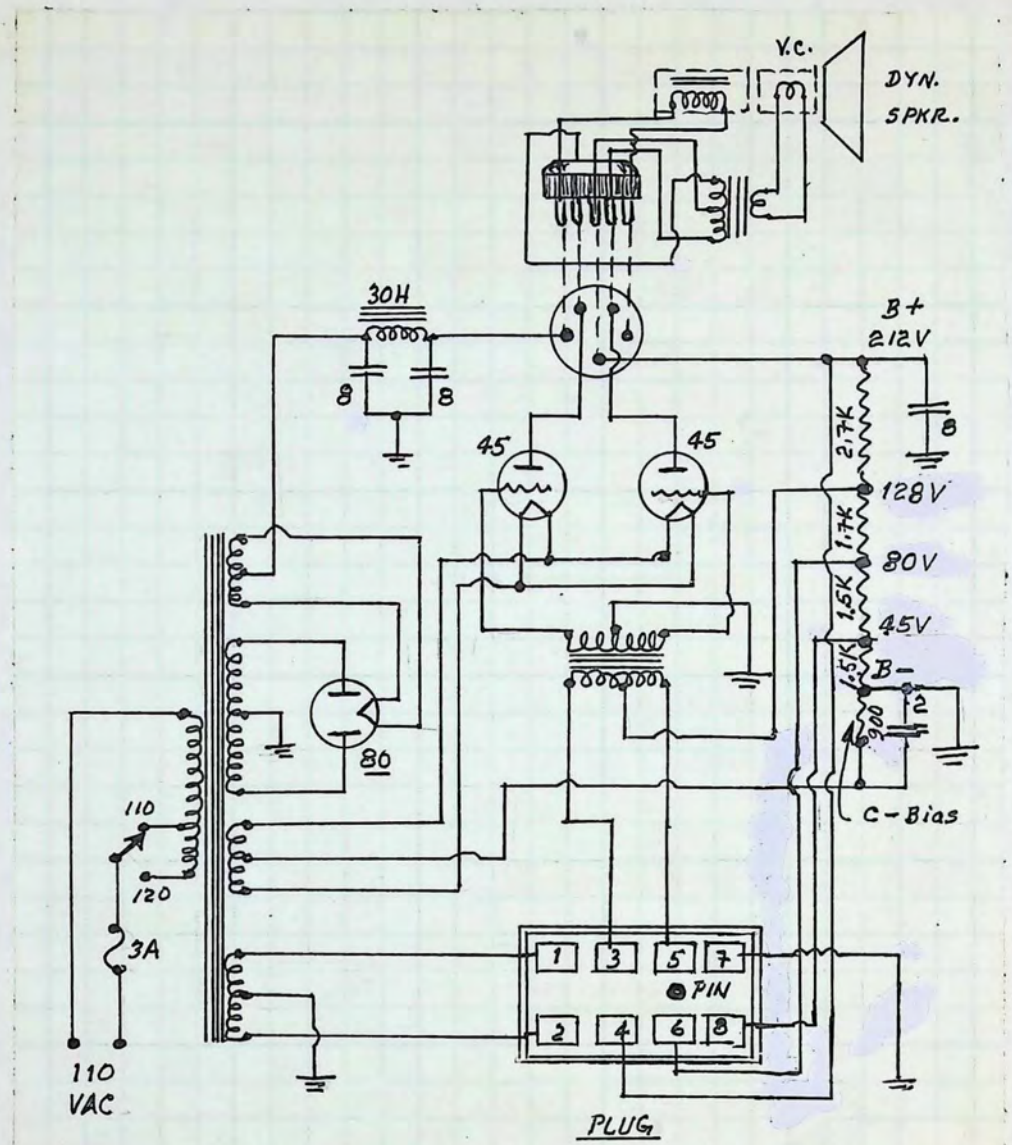




(A DC model was also available, with (3) 01A, 71A tubes.)

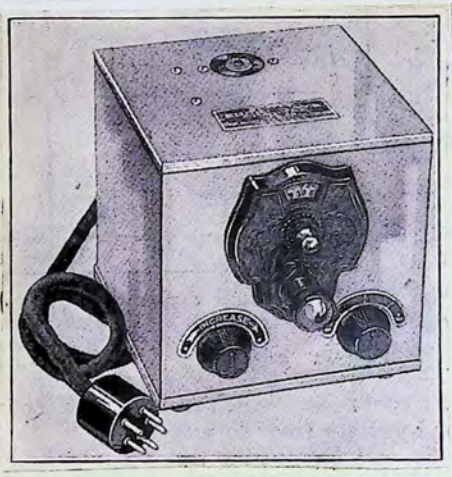
SCOTT S.G. AC "SYMPHONY", Sht. 2

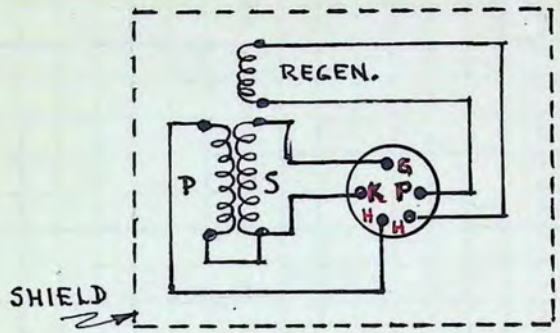




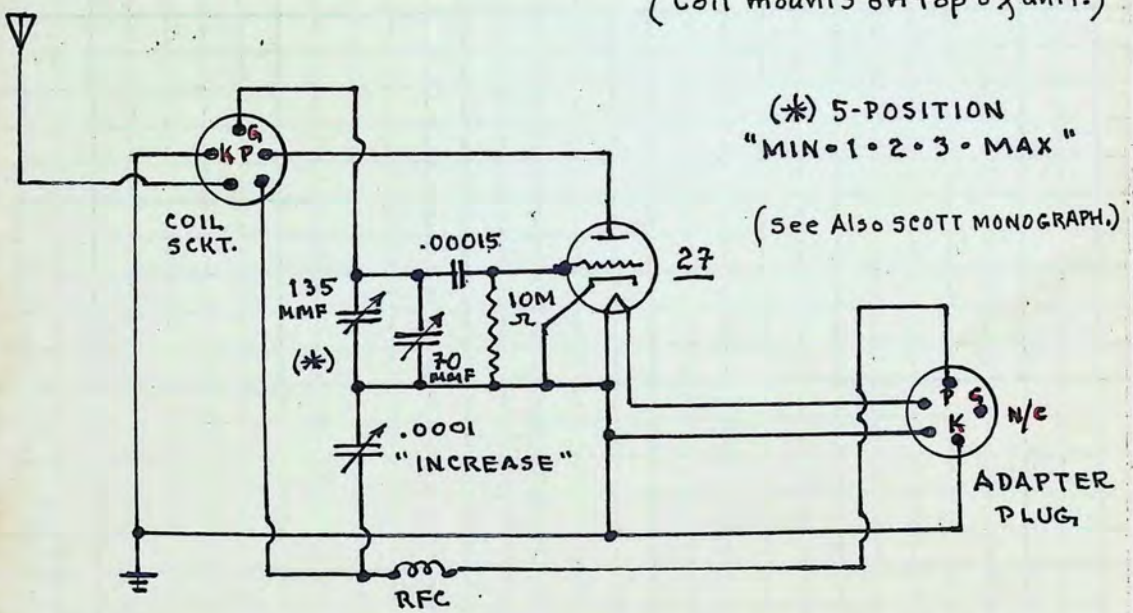
SCOTT TYPE 145
POWER AMPLIFIER

SUPER SHORT WAVE CONVERTER





COIL SCKT. DET.
(Coil mounts on top of unit.)



NOTES:
1. Remove DET tube from set & place in converter from bottom.
2. Remove set OSC tube and lay aside.
3. Set dials have no effect on converter tuning.
4. Tune converter until rushing sound is heard; turn control down to just below point of oscillation.
5. "INCREASE" control is for converter volume.
6. Original Scott coils covered 15 to 93 meters.
7. Adapter plug goes into 1st DET socket.
8. Antenna for 14 - 26 meter coil was specified as 80'; antenna for all other coils = 100'.
9. Be sure to disconnect ANT and GND at receiver posts.

USING THE SCOTT SHORT-WAVE CONVERTER

The Scott short-wave converter was designed originally to be used with the screen-grid Scotts, which were the interim Scott receivers before the chrome-plated "All-Wave" receivers were offered. The converter can be used with other receivers not Scott.

1. The regular tuning dials of the receiver have no effect on tuning or operation of the converter.

2. The only control on the receiver to be used is VOLUME.

3. To receive CW, VOLUME control must be turned until a rushing sound is heard, which places the tube in oscillation.

4. To receive AM broadcasts, turn down Volume control until set is just below point of oscillation.

5. A wire-antenna of not more than 80' should be used, although the regular BC antenna will be satisfactory. the Scott Super DX Antenna System should not be used.

Scott recommended the Arcturus 27 for use in the converter. If you decide to use the tube, it may be left permanently in the converter, simply laying the DET tube from the receiver aside, along with the OSC tube which was previously removed.

The following statements are an epitome of comments published by Scott as part of his instructions to owners of his "All-Wave" sets, and which are pertinent in general to SW listening.

1. When searching for stations on the shorter waves, always rotate the dial very S-L-O-W-L-Y. While you can tune a couple divisions of the dial off the AM signal and still have an acceptable signal, in tuning SW each division of the dial is critical.

2. The best foreign SW broadcasts occur during the day, contrary to popular belief. Best reception is from 15 to 30 meters. All foreign stations broadcast on more than one wave-length (frequency) simultaneously, and this is done simply to insure their signal getting to distant points with volume and clarity.

3. All foreign SW stations, and the U.S. stations such as VOA, WWV, AFRN, have increased their power enormously over the years,

to where good signal volume is possible during any season of the year. In the early days, Spring and Summer were deemed the best times for DX, but with modern transmissions, fishing for DX is no longer much of a challenge, even with the devices currently called SW Receivers.

4. As a rule of thumb, a short antenna is better for SW than a long one. If your's is an AC Scott, the Special Antenna System designed by Scott, and will be found detailed on other pages of this Monograph, is worthy of your interest.

5. All foreign SW stations issue periodically their broadcasting schedules, and you should avail yourself of them where feasible. This includes the Communist countries, who are also likely to include a mass of raw political propoganda with their schedules. However, some countries will actively solicit your reception reports, and never acknowledge them. The enclosure of an I.R.C. with your request to most Western World countries will usually bring you a speedy response.

6. The use of a 24-hour clock, set for Greenwich Mean Time, will prove very useful in checking your schedules. (Not U.T.C., which is slightly different.) Next to the GMT clock you should have one reflecting your local time, always keeping in mind that times for such countries as Japan, Australasia, Red China, Taiwan, and such, are 24 hours ahead of wherever you are in the U.S. Their broadcasting schedules should then be interpreted accordingly.

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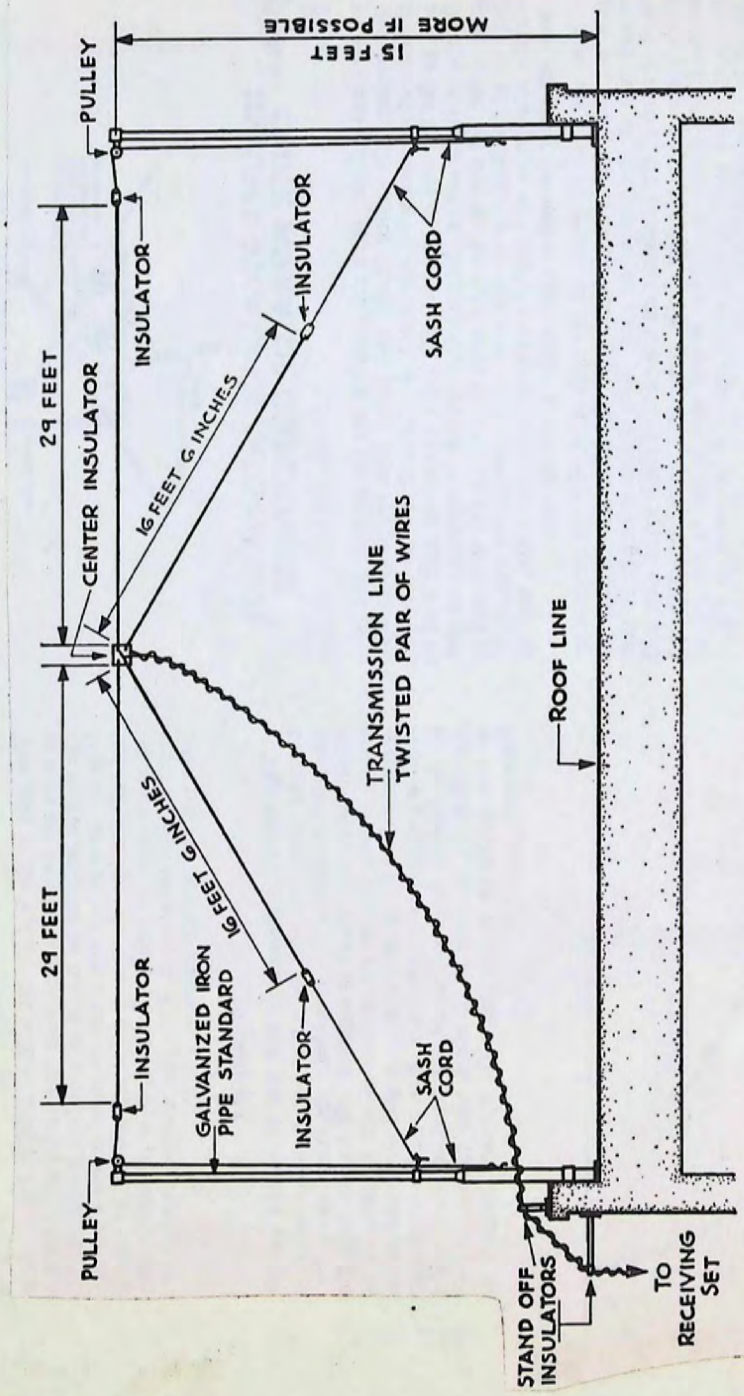

SCOTT ALL-WAVE SUPER ANTENNA SYSTEM

E.H.SCOTT vs. McMURDO SILVER's "Masterpiece V" SPECIFICATIONS

No.	TYPE OF TUBE	Master-piece	PHANTOM		Phil-harmonic FM Model
			Stand-ard	FM Deluxe	
6F8G	Dual Triode	0	0	0	1
6J5G	Super Triode Amplifier	4	4	4	1
6B8G	Duo Diode High Gain Pentode	1	3	3	4
6L6G	Beam Power Amplifier	0	2	2	4
6K7G	Triple Grid Amplifier	3	3	3	4
6H6	Duo Diode	0	1	2	3
6U7G	RF Pentode	1	1	1	2
5U4G	Full Wave High Vacuum Rectifier	1	2	2	2
6E5	Tuning Indicator	1	1	2	2
6J7G	Triple Grid Amplifier	0	1	3	3
VR150	Voltage Regulator	0	1	1	1
6L7G	Pentagrid Mixer Amplifier	1	1	1	1
6V6	Beam Power Amplifier	2	0	0	0
185	Variable Mu-High Gm R.F. Pentode	0	0	1	2
6SA.	Single Ended Pentagrid Converter	0	0	1	1
1232	High Gm Pentode	0	0	2	2
	Total Number of Tubes Employed	14	20	28	33

TUBE FUNCTION	Master-piece	PHANTOM		Phil-harmonic FM Model
		Stand-ard	FM Deluxe	
Converter (Mixer)	1	1	1	1
Oscillator	1	1	1	1
RF Amplifier (Amplitude Modulation)	1	1	1	2
RF Amplifier (Frequency Modulation)	0	0	1	2
Detector (Amplitude Modulation)	1	1	1	1
Detector (Frequency Modulation)	0	0	1	1
IF Amplifier (Amplitude Modulation)	3	3	3	4
IF Amplifier (Frequency Modulation)	0	0	2	2
Automatic Volume Control	1	3	3	4
Tuning Eye (Amplitude Modulation)	1	1	1	1
Tuning Eye (Frequency Modulation)	0	0	1	1
AF Amplification	5	5	5	7
Inverter	1	1	1	1
Sensitivity Control Tube	0	0	0	1
Discriminator (Frequency Modulation)	0	0	1	1
Needle Scratch Suppressor	0	3	3	3
Voltage Regulator	0	1	1	1
Rectifier	1	2	2	2
Dickert Noise Limiter	0	1	1	1
Frequency Modulation Noise Limiters	0	0	2	2
Total Tube Functions	16	24	32	39
Extra Functions Performed by Multiple-Purpose Tubes	2	4	4	6
Net Number of Tubes	14	20	28	33

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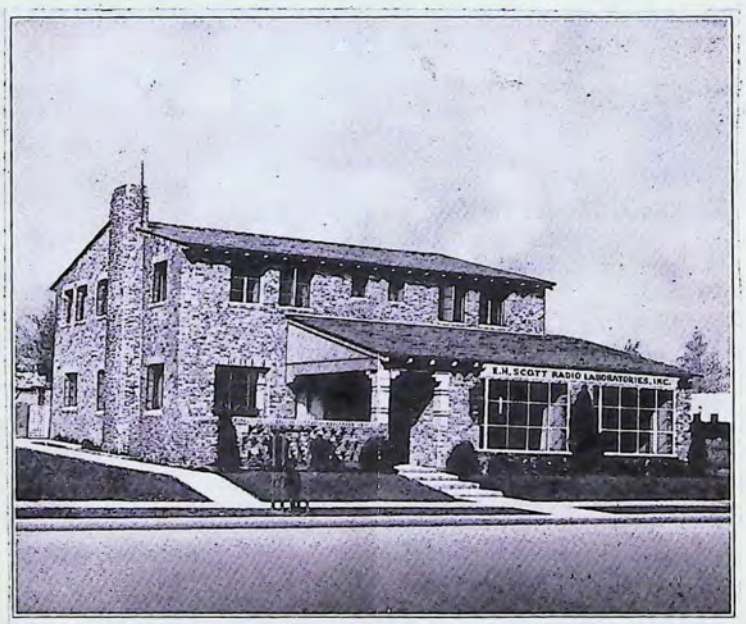
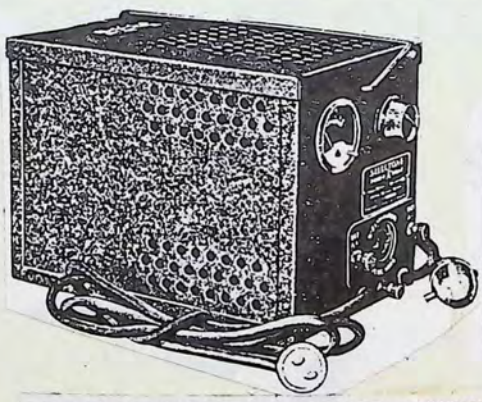
4450 Ravenswood Ave.
Chicago
E. H. SCOTT, *Editor*

THE STRADIVARIUS OF RADIO RECEIVERS
SCOTT



The New Studio Located at 115 N. Robertson Blvd., Los Angeles, Calif.

SCOTT
Marine Model
LOW-RADIATION
RECEIVER



SELECTONE A POWER UNIT

THE
SCOTT REMOTE
CONTROL

BIGGEST RADIO SET HAS FORTY TUBES

WHAT is believed to be the largest and most powerful radio receiving set ever assembled is the latest achievement of a well-known Chicago radio engineer. Designed for world-wide reception on all wave lengths, the mammoth receiver has a complicated circuit which employs forty tubes. Five separate loudspeakers, operating simultaneously, cover a wide sound-frequency range, and give exceptional tonal quality. The total weight of the receiver, shown below, is 620 pounds.

THE SCOTT QUARANTA

746 Franchised
Scott Custom Radio Builder

This Is To Certify That

W. N. Williams

has been duly appointed an Authorized Builder of and Dealer in Scott World's Record Radio Receivers. This franchise has been granted only after the holder has qualified under rigid tests as to technical ability in radio construction and installation and character.

We join with this Authorized Builder in guaranteeing to any purchaser of a Scott Receiver complete and thorough satisfaction.

SCOTT TRANSFORMER COMPANY
CHICAGO

President

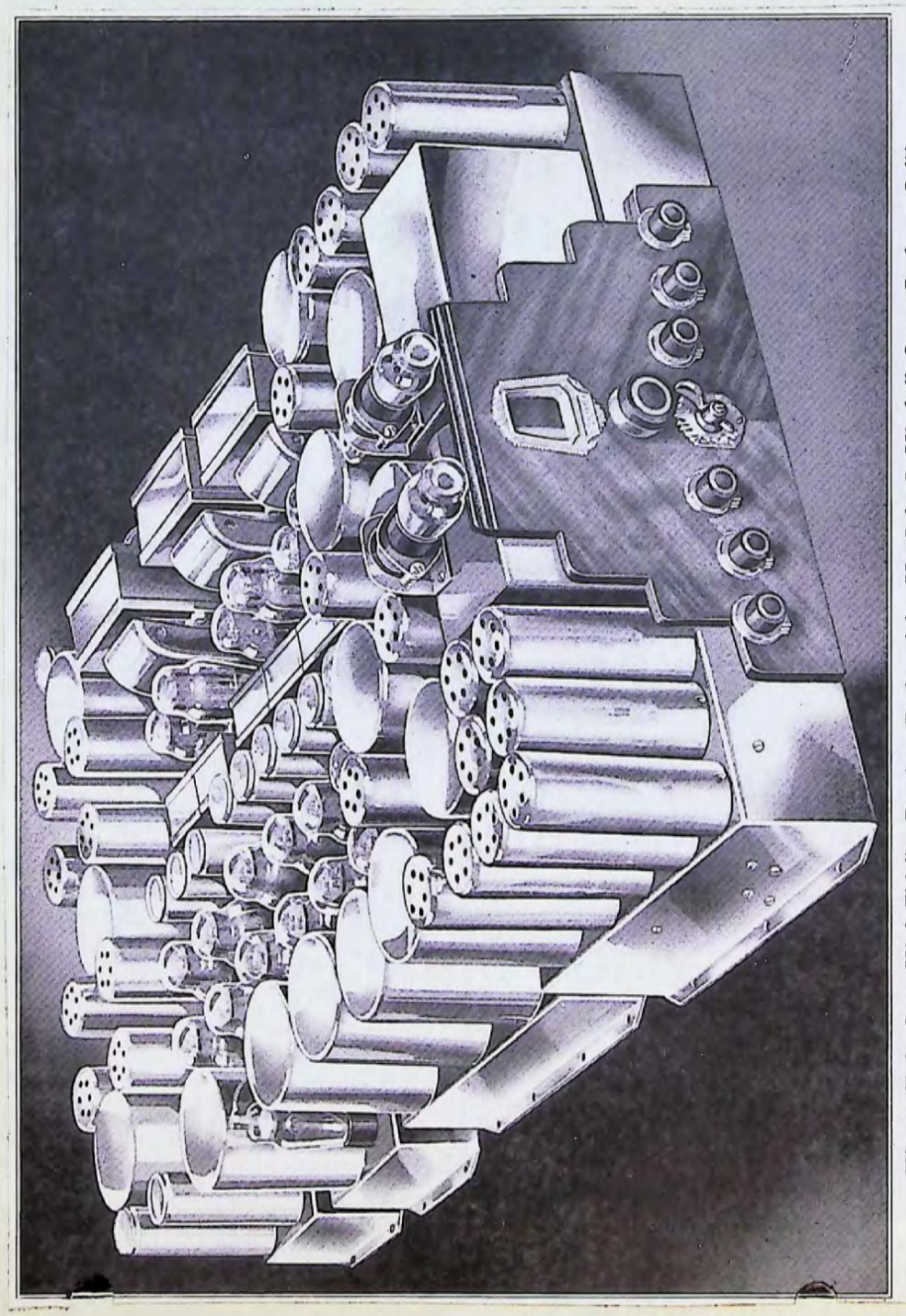
The Authorization or Franchise Card which comes with your Franchise.

GUARANTEE

I personally guarantee the parts of the SCOTT WORLD'S RECORD SHIELD GRID NINE to be free from all defects in material and workmanship and that the performance of the assembled set will in every way be what it is advertised to be, providing that the set has been built strictly in accord with the instructions and diagrams going with it as a part of the sale of said set.

Signed

E. H. SCOTT, Pres.
The Scott Transformer Co.



The 48 Tube Scott High Fidelity Receiver Designed for Mr. John J. Mitchell, Santa Barbara, Calif.

THE WORLD'S MOST COMPLETE AND POWERFUL RADIO RECEIVER

The Five Special Speakers—Automatic Record Changer—Recording Equipment and Ribbon Microphone

There can be little doubt, even today, that the radio shown on this and the facing page was definitely what the headline proclaimed. Every legitimate advance in radio was incorporated for both short-wave and broadcast reception, along with transcription recording and record-playing through truly high-fidelity speaker complex, as shown above.

Selectivity was 2 KC, audio output was 35 watts undistorted, a range of from 30 to 16,000 cycles, noise suppressor circuit, volume range expander, AVC, amplified visual tuning, BFO, and this in 1935.

Despite the marvellousness of Scott's dramatic giant leap to a radio without equal, the Mitchell-Scott was not his most ambitious effort.

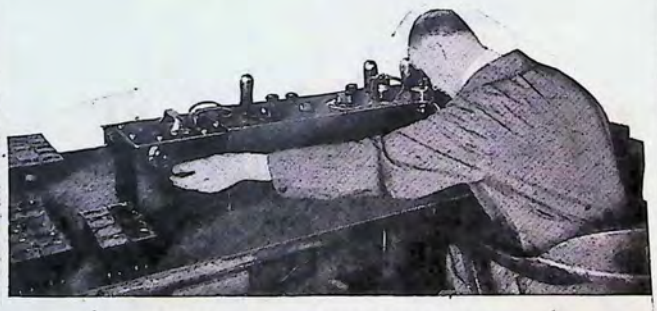
* * *

PRESENTING
THE NEW SCOTT Philharmonic

TYPE R for Baseboard Mounting

TYPE B for Sub-Base Mounting

Testing Selectone Radio Frequency Units



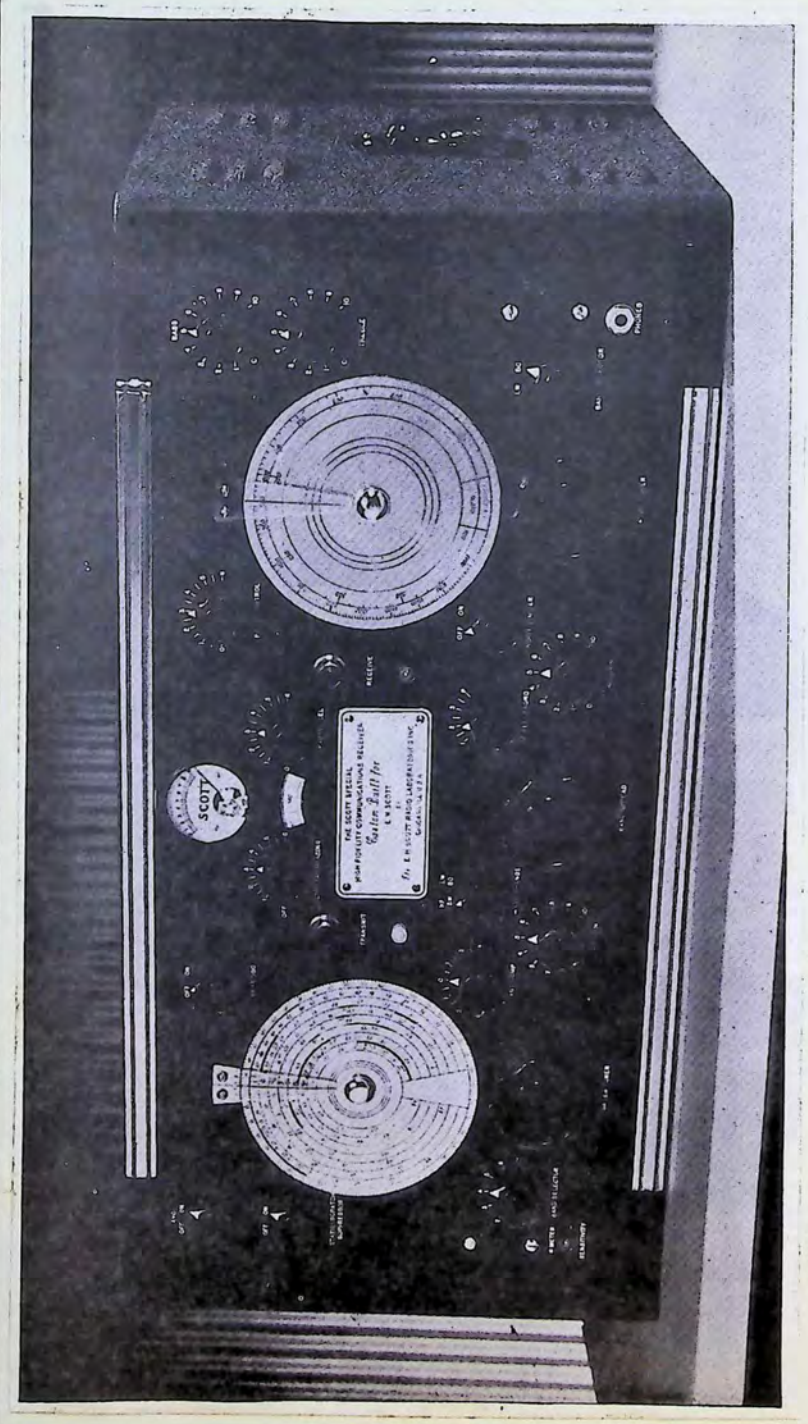
Apparatus for Matching Transformers

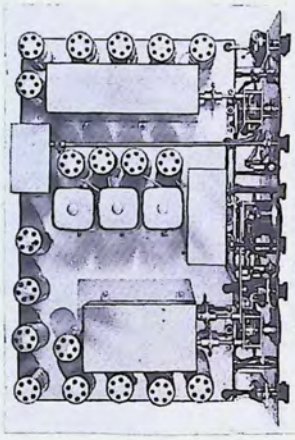
Special Testing Receiver

Mr. E. H. Scott testing Selectones in special test receiver

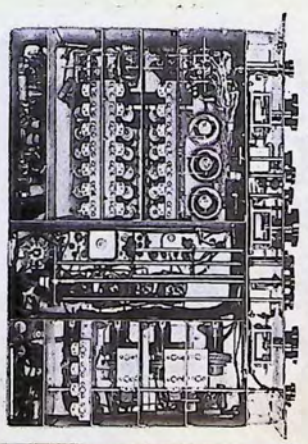
Scott Communication Receiver

($ 650)



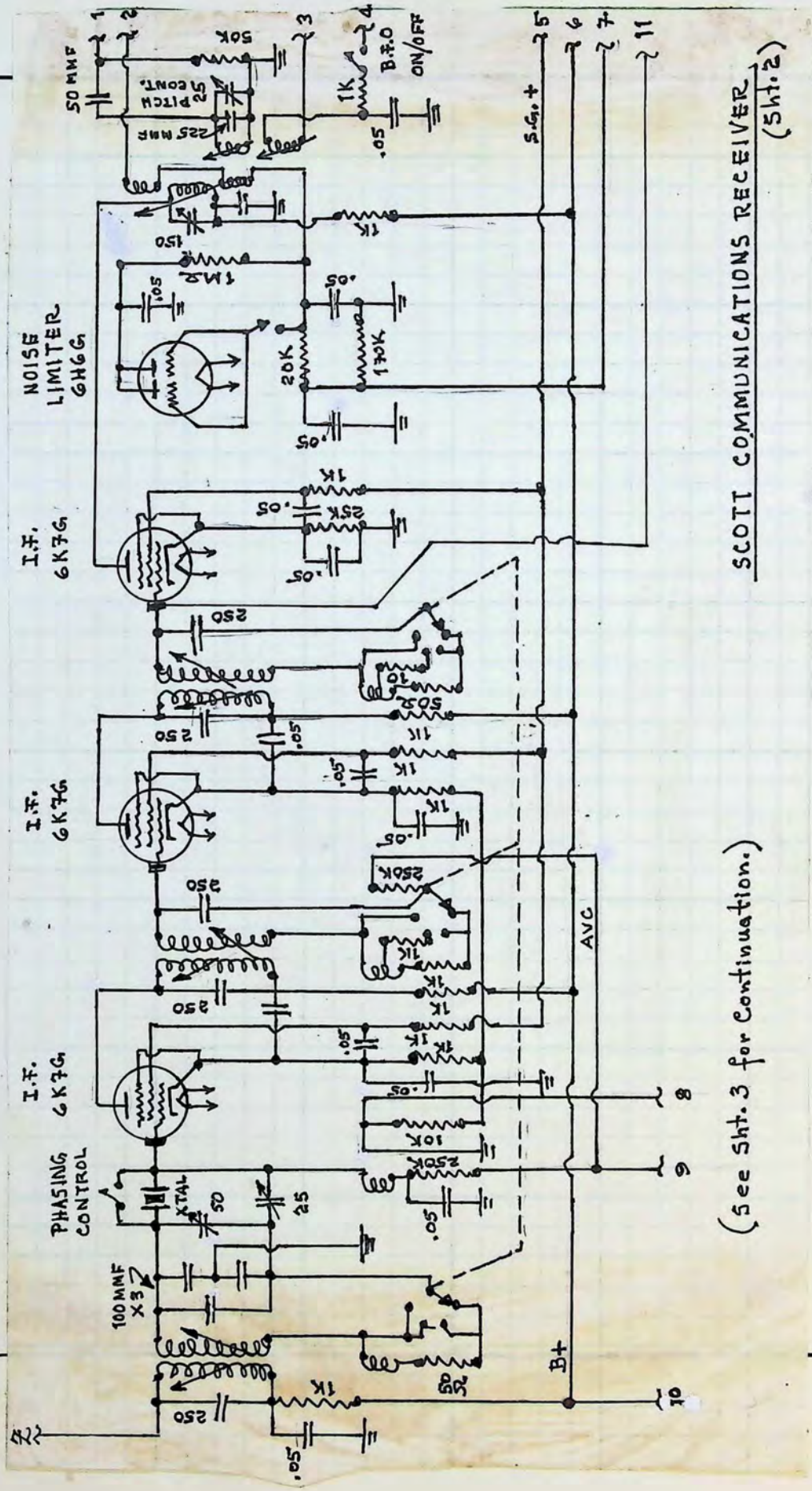


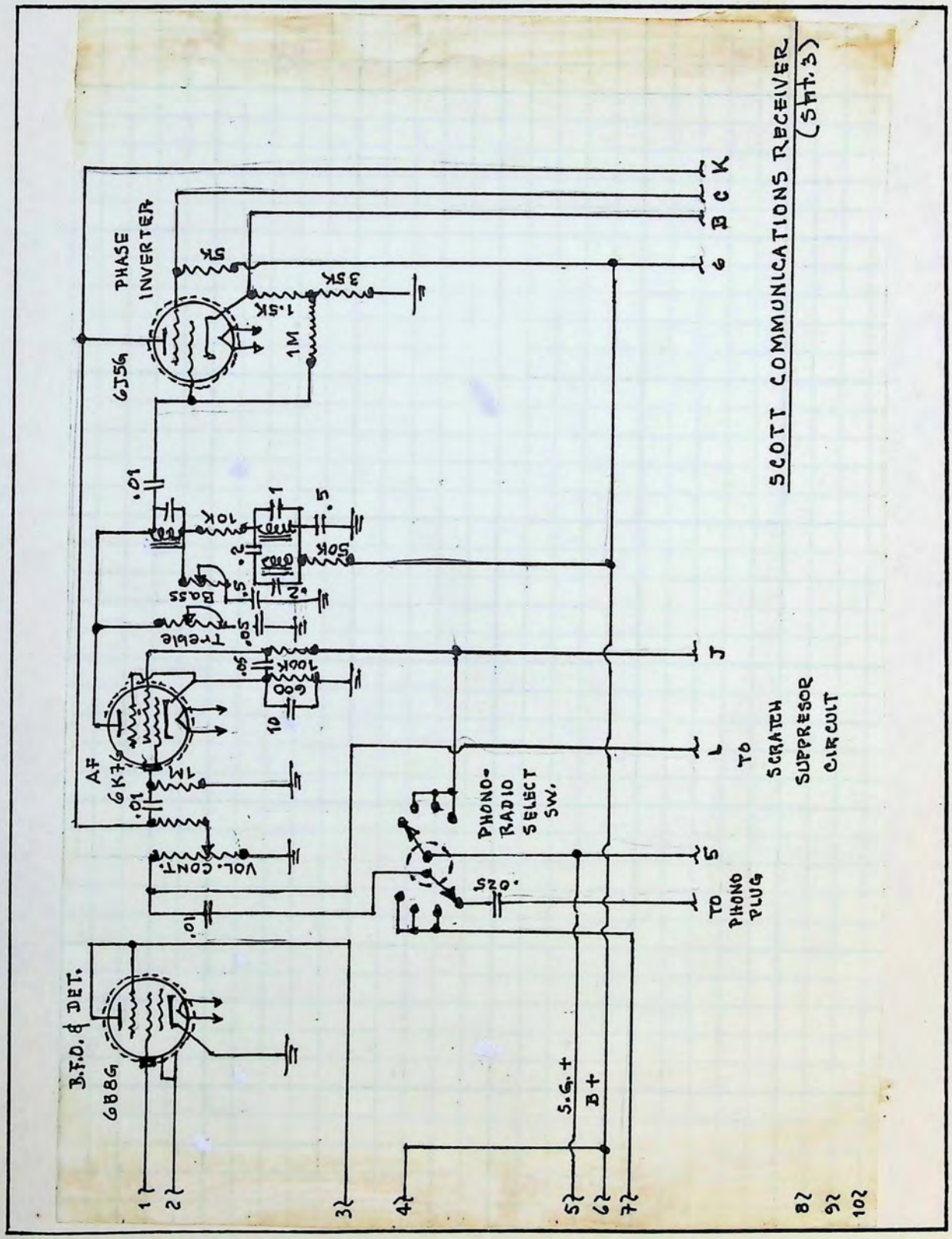
Top view of chassis

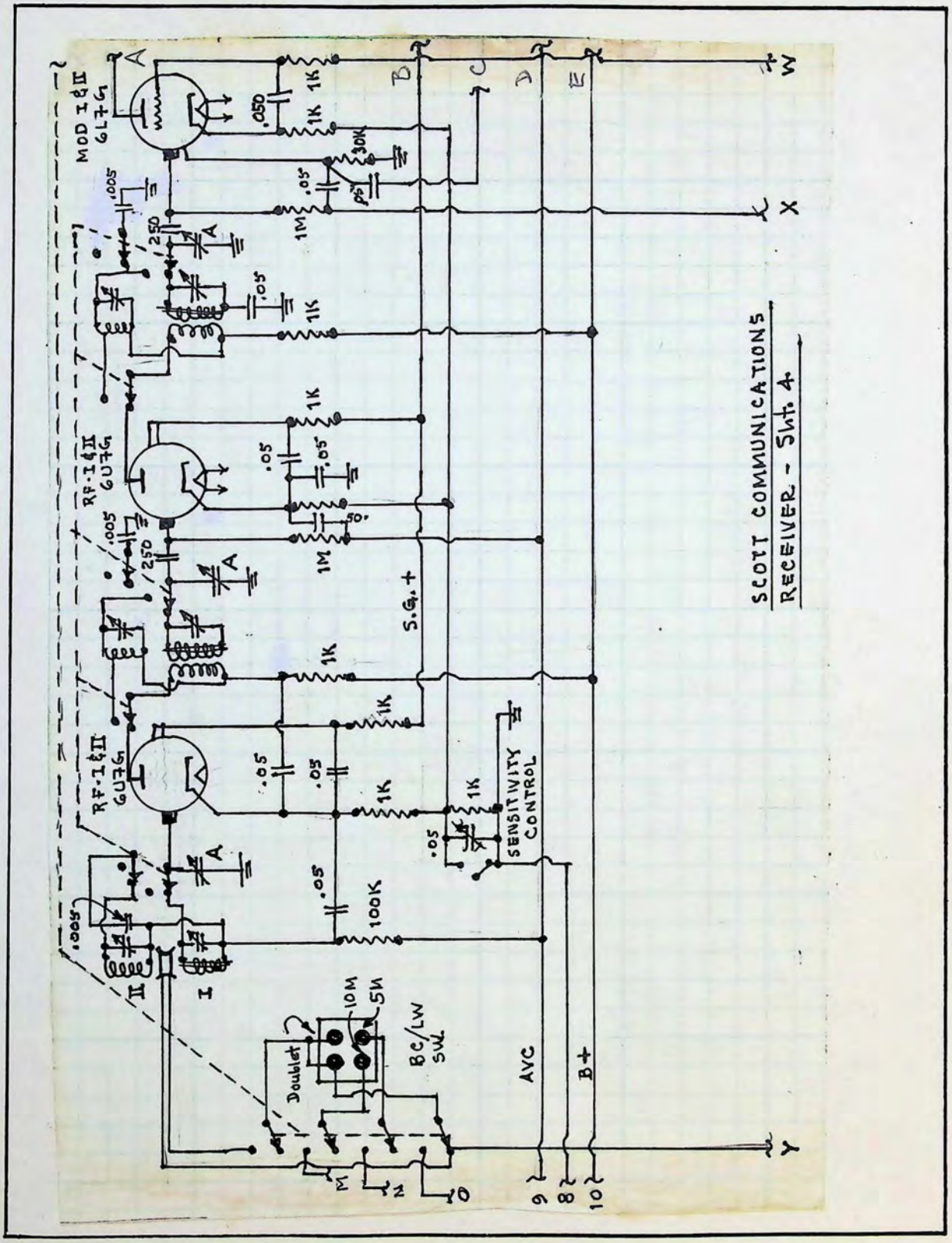


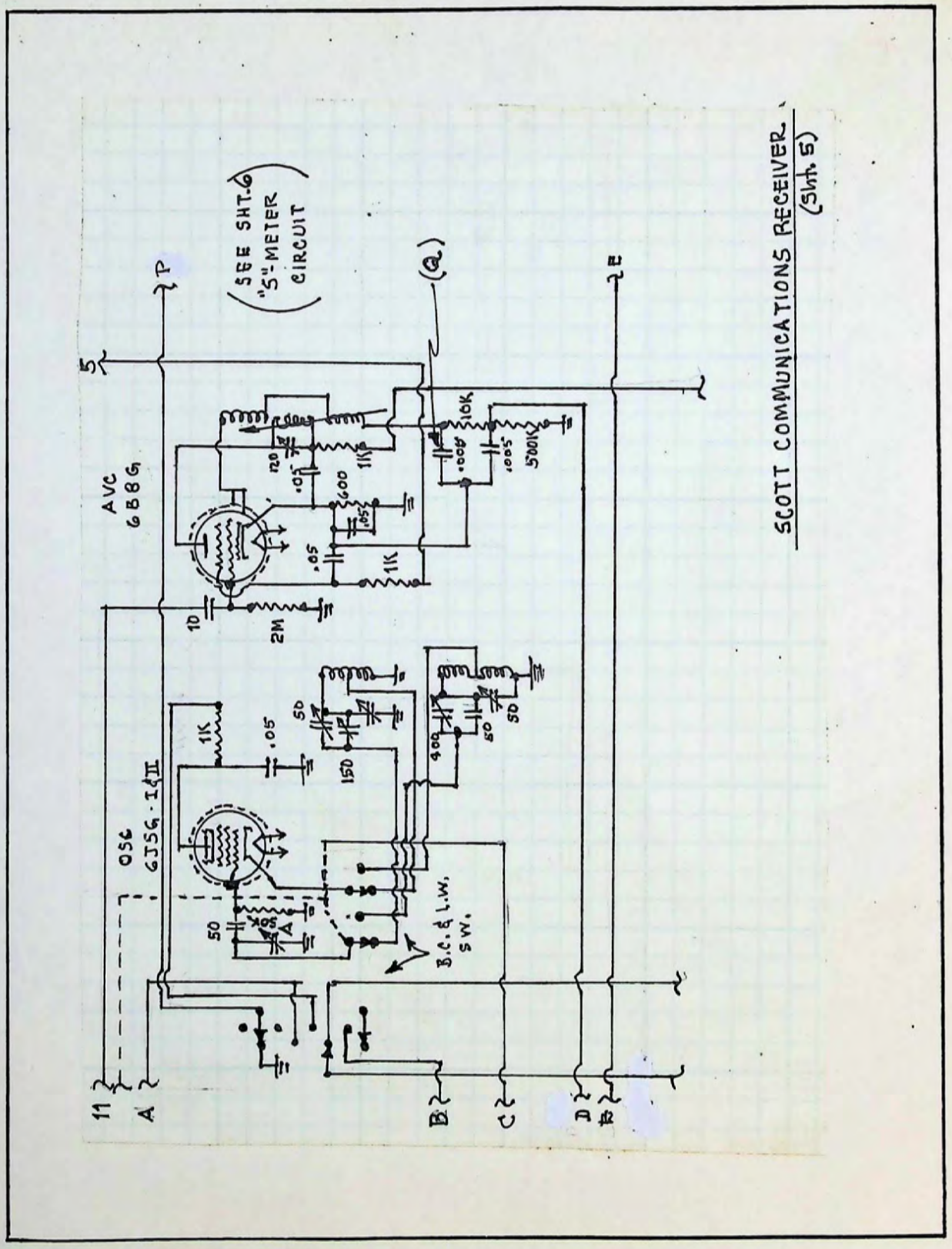
Underneath view of chassis

14

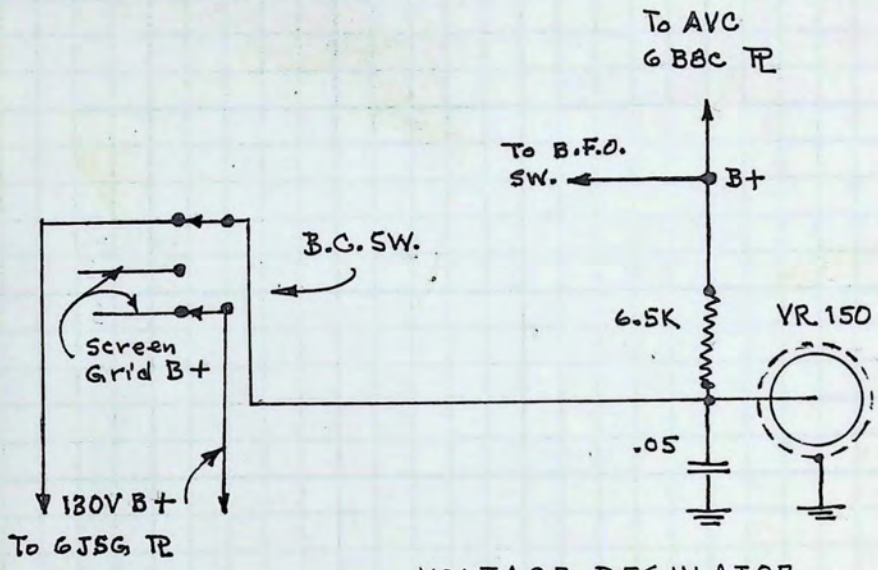

SCOTT COMMUNICATIONS RECEIVER (Sht. 2)
(See Sht. 3 for continuation.)
NOISE LIMITER 6H6G
I.F. 6K7G
I.F. 6K7G
I.F. 6K7G
PHASING CONTROL
50 MMF
50K
1K
B.F.O ON/OFF
S.G. +
AVC
B+
20K
130K
250K
100 MMF
XTAL
.05
1K
250


SCOTT COMMUNICATIONS RECEIVER (SHT. 3)
PHASE INVERTER
6J56
5K
3.5K
1.5K
1M
.01
10K
50K
Bass
Treble
100K
AF
6K7G
1M
VOL. CONT.
B.F.O. & DET.
6B8G
PHONO-RADIO SELECT SW.
S20.
TO PHONO PLUG
TO SCRATCH SUPPRESOR CIRCUIT
B C K
J
L
S
5.G.+
B+
1
2
3
4
5
6
7
8
9
10

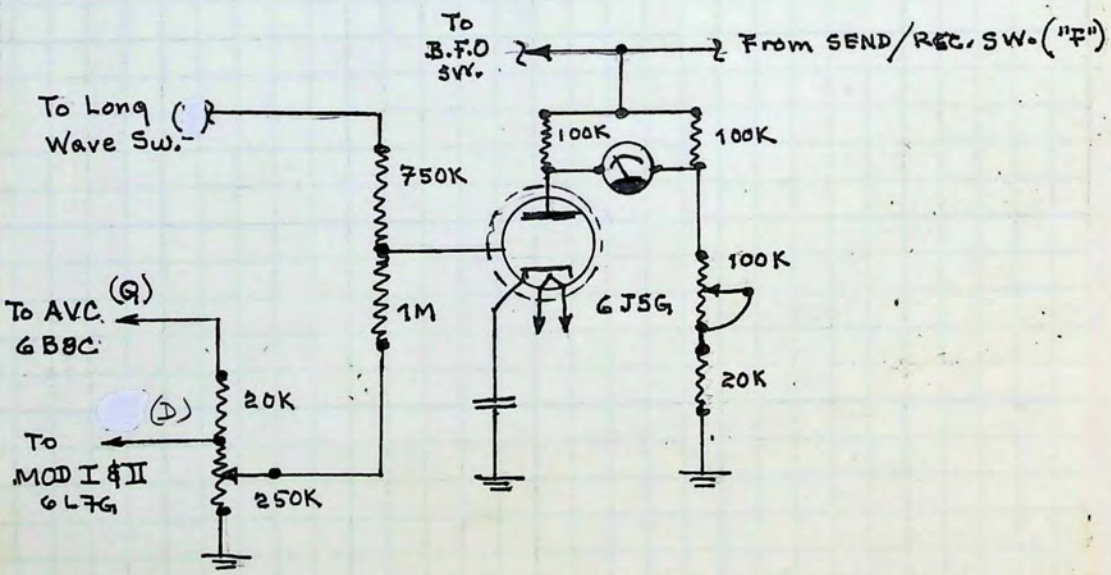

SCOTT COMMUNICATIONS
RECEIVER - SHT 4
MOD I & II
6L7G
RF-1 & II
6U7G
RF-1 & II
6U7G
RF-1 & II
6U7G
1K
.05
30K
1M
250
S.G.+
SENSITIVITY CONTROL
100K
AVC
B+
BC/LW SW.
10M
5M
Doublet
A
B
C
D
E
W
X
Y
I
II
M
N
O
9
8
10


SCOTT COMMUNICATIONS RECEIVER
(Sht. 5)
(SEE SHT. 6 "S"-METER CIRCUIT)
AVC
6B8G
OSC
6J5G·I4II
B.C. & L.W. SW.
5
P
(Q)
E
11
A
B
C
D
F
10K
500K
2M
1K
600
400
150
.05
.008
.005
.1
50

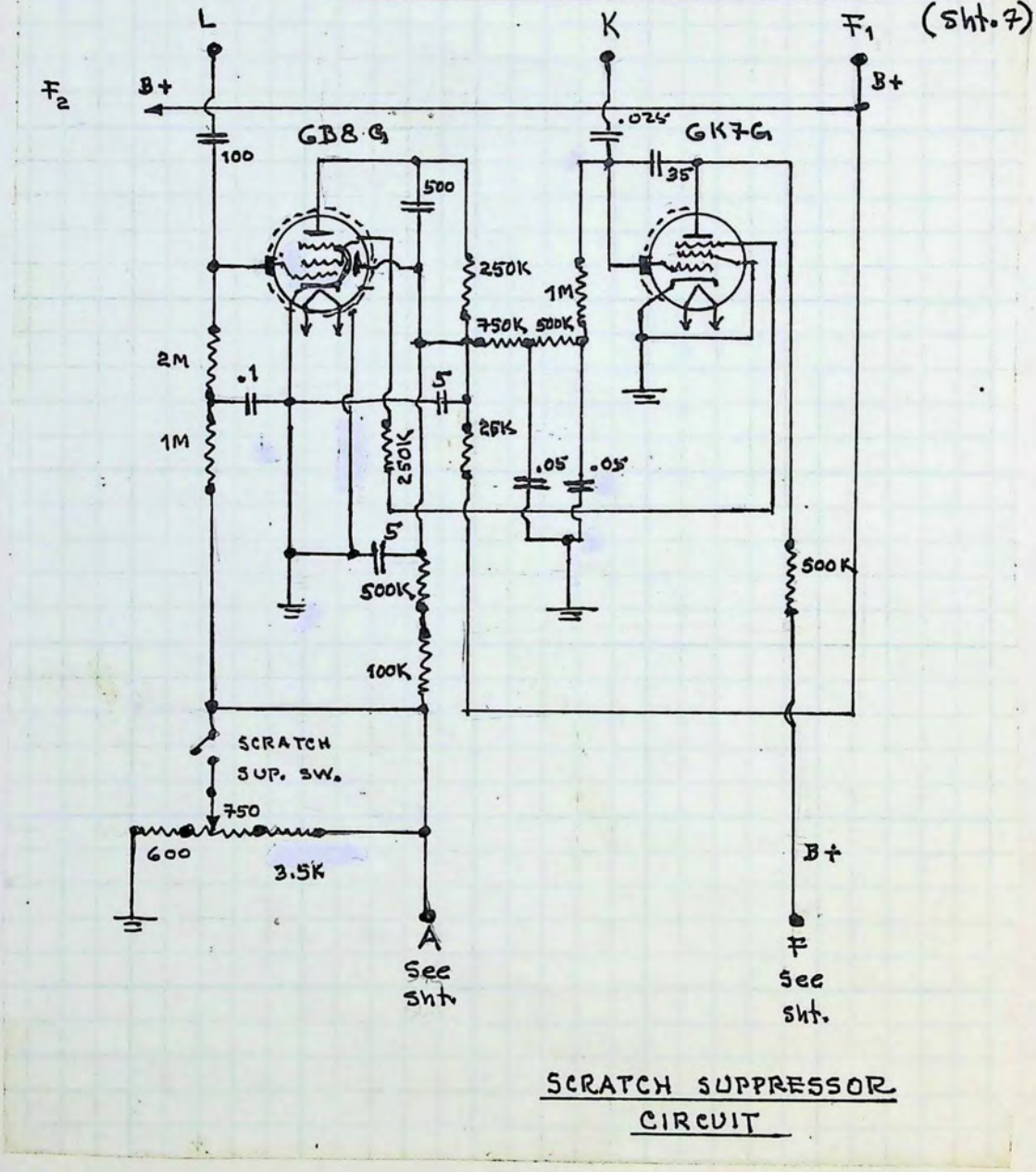
SCOTT COMMUNICATIONS RECEIVER (Sht. 6)



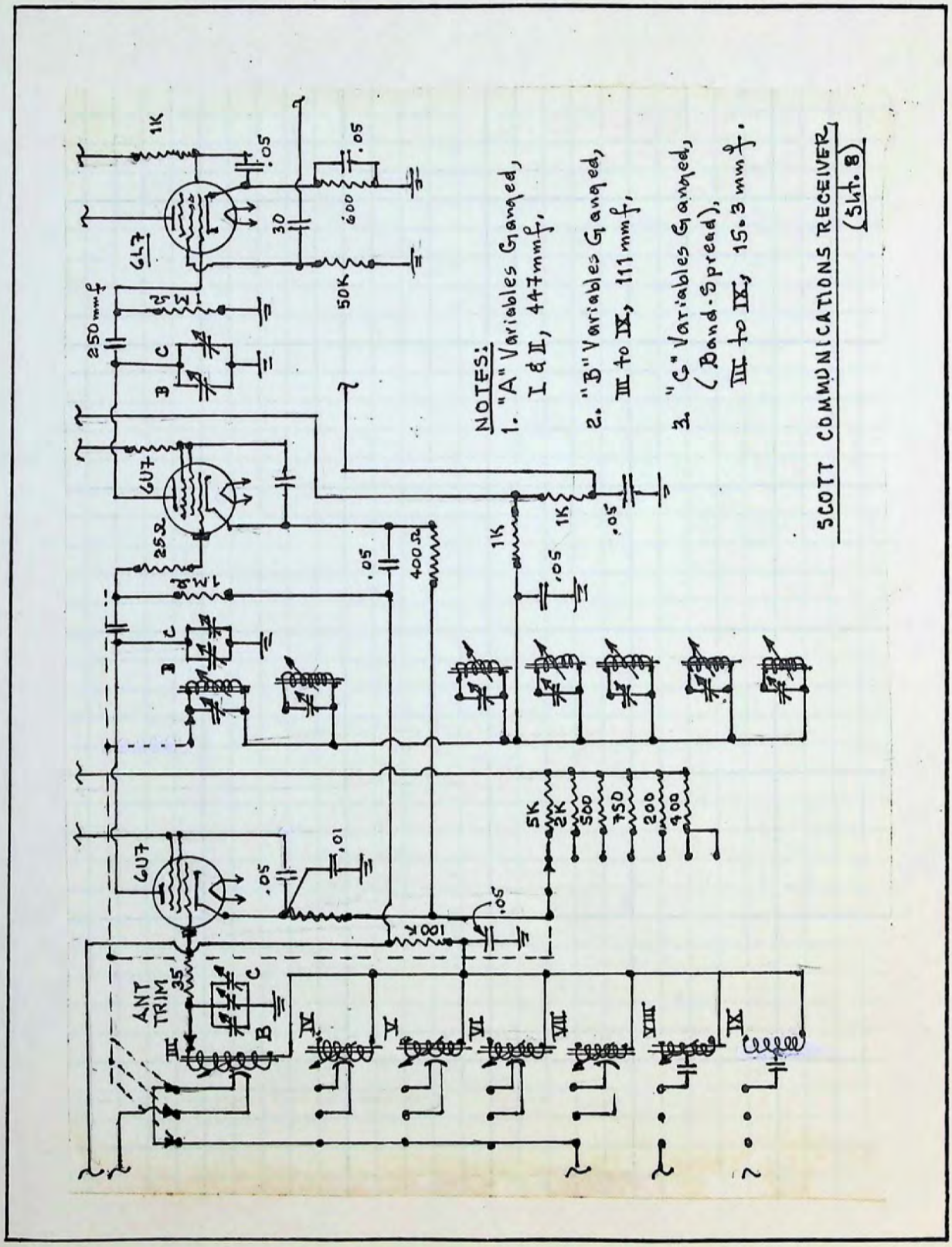
VOLTAGE REGULATOR

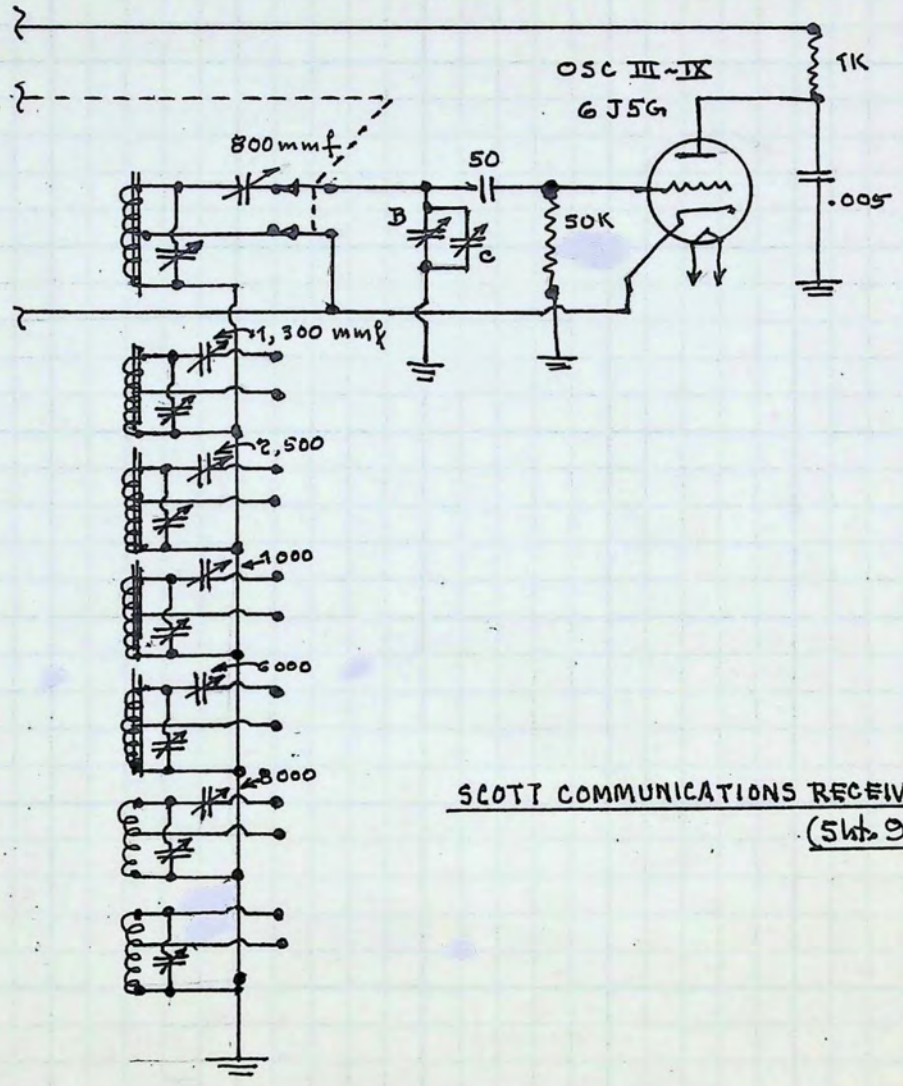


"S"-METER CIRCUIT



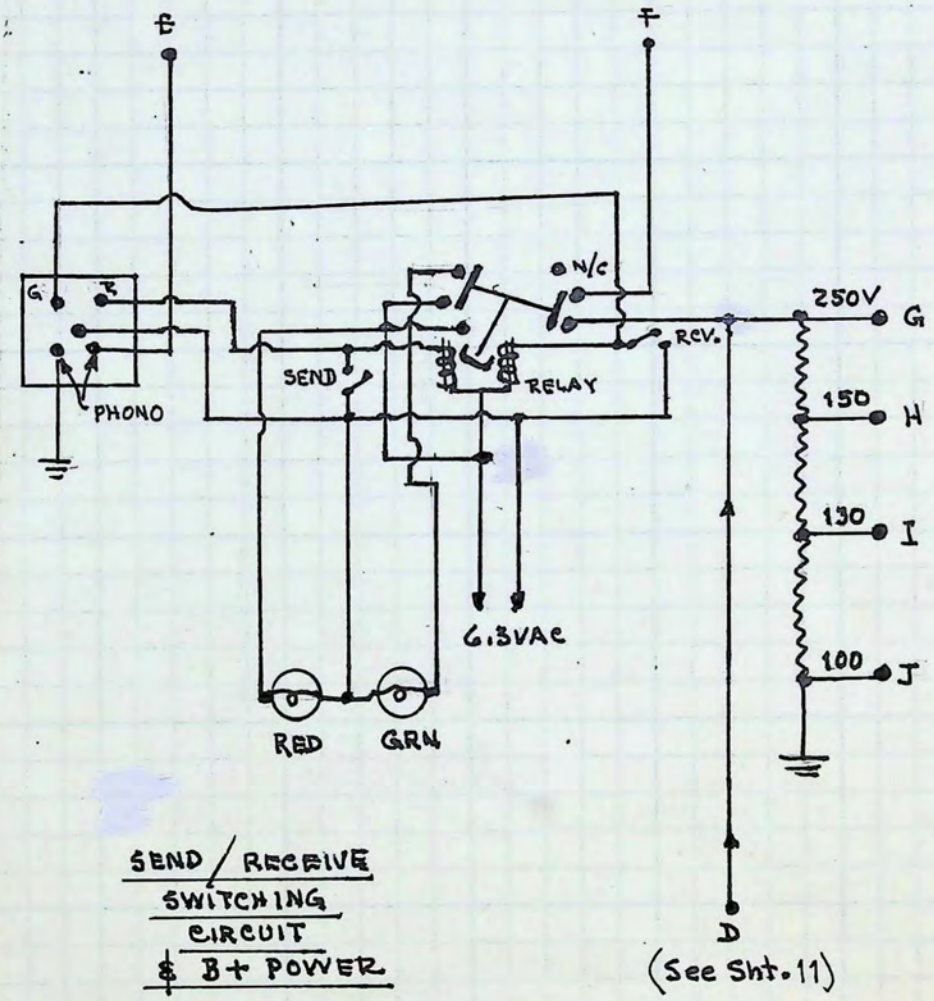
SCRATCH SUPPRESSOR CIRCUIT


NOTES:
1. "A" Variables Ganged, I & II, 447mmf,
2. "B" Variables Ganged, III to IX, 111mmf,
3. "C" Variables Ganged, (Band-Spread), III to IX, 15.3 mmf.
SCOTT COMMUNICATIONS RECEIVER (Sht. 8)
6U7
6L7
ANT TRIM
1K
.05
30
600
50K
250mmf
252
1.2MEG
400Ω
100K
.01
5K
2K
500
750
200
400
35

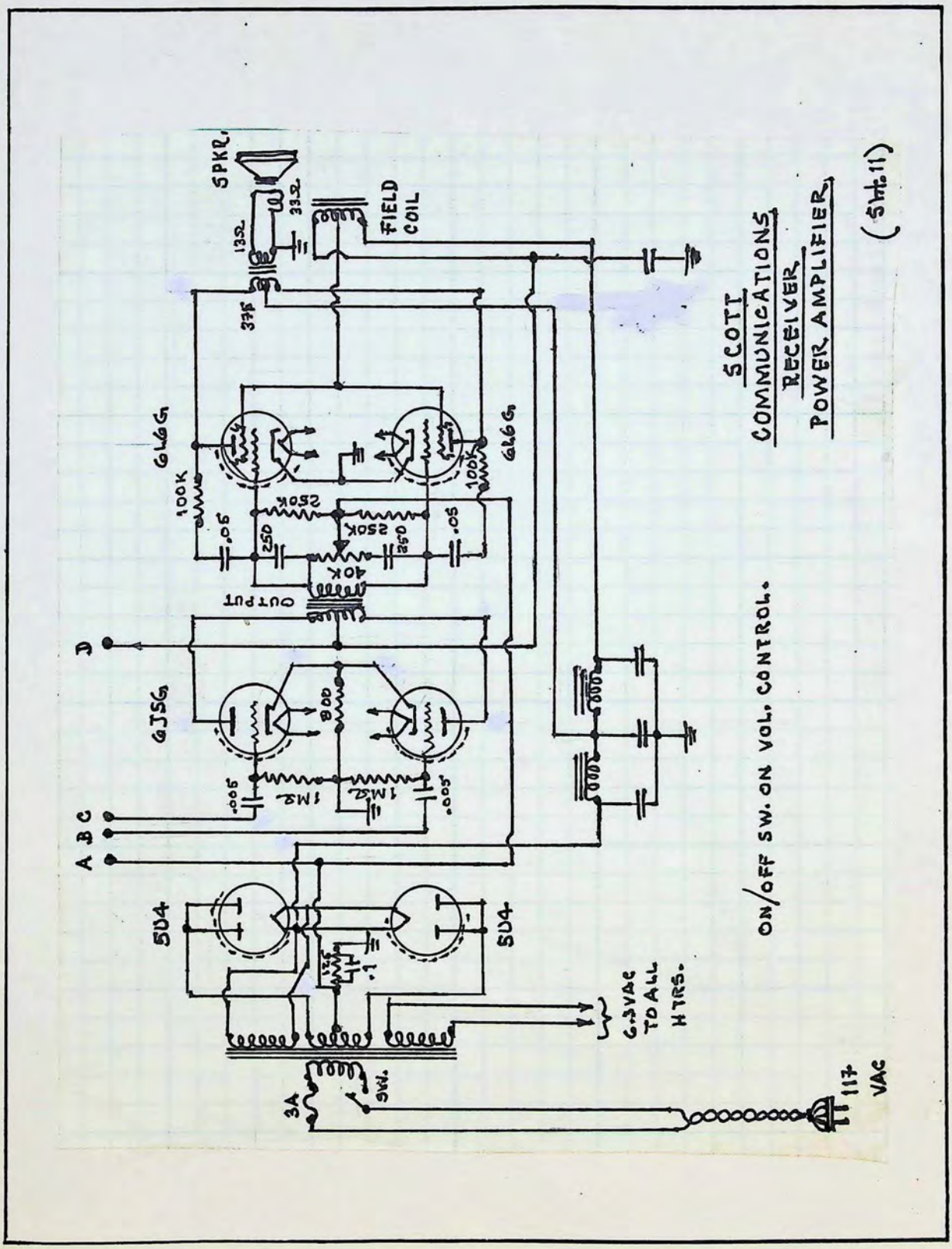


SCOTT COMMUNICATIONS RECEIVER
(Sht. 9)

SCOTT COMMUNICATIONS RECEIVER
(Sht. 10)



SEND / RECEIVE SWITCHING CIRCUIT & B+ POWER


SCOTT
COMMUNICATIONS
RECEIVER
POWER AMPLIFIER
(Sht. 11)
ON/OFF SW. ON VOL. CONTROL.
SPKR.
FIELD COIL
OUTPUT
6L6G
6J5G
5D4
A
B
C
D
117 VAC
SW.
6.3VAC TO ALL H'TRS.

NOTES

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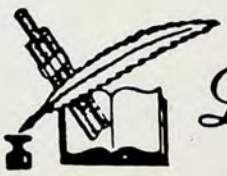

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